

HAYNES
GUIDE

YELLOWSTONE
NATIONAL
PARK

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HAYNES NEW GUIDE

The Complete Handbook « « « « of » » » » Yellowstone National Park

By
JACK ELLIS HAYNES, B. A.

Approved by the
National Park Service
Department of the Interior

Forty-first Revised Edition
Illustrated

Published by



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OLD FAITHFUL GEYSER—150 FEET

28058

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To All Peoples

THE National Park Service of the United States Department of the Interior in which the administration of all national parks of America is vested welcomes you to Yellowstone National Park.

The Service welcomes you to the fullest use of the highways, trails and paths, the public automobile camp grounds, hotels and lodges.

You are invited to profit by the recreational facilities, to study the scientific and historical features, to explore the wild trailed fastnesses, to climb the mountain peaks, to fish the streams and lakes, to see the great laboratory of geysers, hot springs terraces, fumaroles, bold ruins of great volcanic flows, silent hills of glacial drift, forests, flowers and wild animals.

The Service offers you opportunities to sense with understanding the beauty, infinite diversity, and greatness of the park.

In the interest of posterity the Service asks your aid and cooperation in preserving intact, without blot or scar, all the features of this great museum of natural history, Yellowstone National Park.

A handwritten signature in dark ink, reading "Horace M. Albright". The signature is fluid and cursive, with a long horizontal stroke at the end.

Director, National Park Service,

Department of the Interior, Washington, D. C.

HAYNES NEW GUIDE



OWNED AND ORIGINATED BY F. JAY HAYNES
WHEN 32 YEARS OLD (1885)



I BOUGHT A
BUCKSKIN COAT AT
FORT BERTHOLD (1880)



HIS PHOTOGRAPHING TRIP IN 1887 WAS
THE FIRST COMPLETE YELLOWSTONE
WINTER TRIP ON RECORD



F. JAY HAYNES'
STUDIO OF 1876
AT
MOORHEAD, MINN.



F. JAY HAYNES, (DRIVING) LATE
PRESIDENT AND FOUNDER OF THE
YELLOWSTONE-WESTERN STAGE CO.



IN 1894 HE MADE
A SECOND
YELLOWSTONE
WINTER TRIP

THE YEAR 1931 MARKS THE GOLDEN ANNIVERSARY OF THE FIRST SUMMER OF
PHOTOGRAPHING BY FRANK JAY HAYNES IN YELLOWSTONE NATIONAL PARK

Preface

NATIONAL PARK SERVICE ranger naturalists conduct park guests along nature trails, through geyser basins and to bear feeding grounds, give informal talks and lectures, and answer all sorts of questions about the park.

Officers and employees of the government and the companies operating in the park are called upon frequently to give information and directions.

Unless one has devoted several seasons to the study of the region it is utterly impossible to remember the locations, scientific explanations and historical facts of all the fascinating gems in the enormous Yellowstone mosaic.

To enable the stranger to find his way about and have at hand complete, methodically-arranged information, and to furnish even those familiar with the park an indispensable and handy reference book, are the purposes of this hand book.

Haynes Guide Book has won government approval by its accuracy and impartiality; it has won popular approval as evinced by the sales of thousands upon thousands of copies each year, which place it well in the lead in quantity sold of all other Yellowstone books.

Free literature is distributed by the government in the park—the *Circular of Information* which should be preserved for one's permanent library contains, in addition to information about all the park features, complete Rules and Regulations.

Pamphlets published by the government for sale, as well as other park publications of merit, including Chittenden's *The Yellowstone National Park*, a monumental book, are available at the several museums and information offices in the park. *Ob Ranger* is also highly recommended.

—Jack Ellis Haynes

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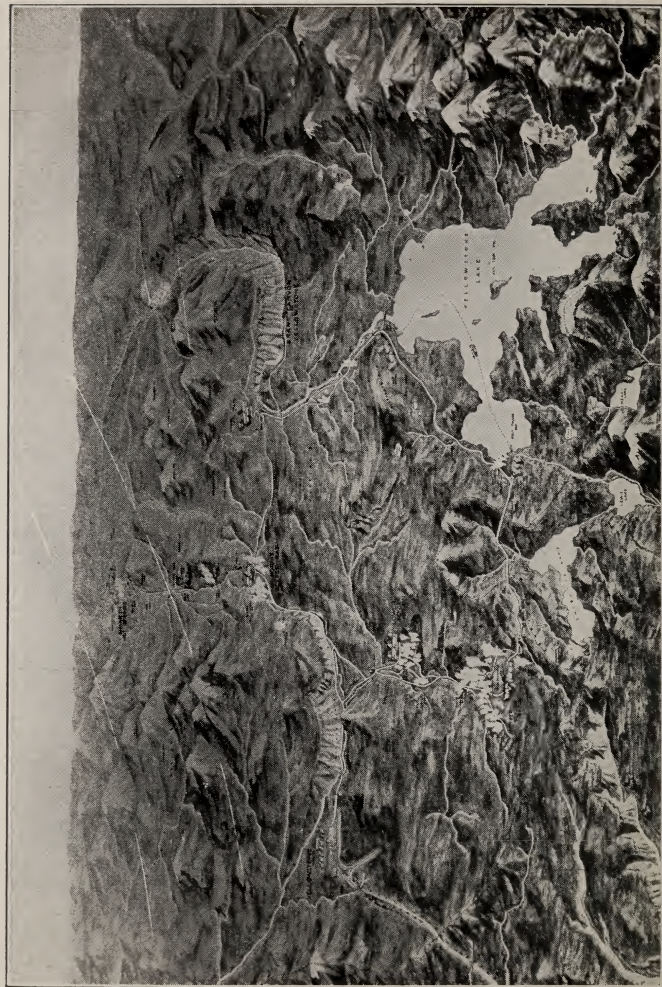
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NE



WE

EE

SE

PARK PANORAMA—DRAWN BY J. E. HAYNES

NE—North Entrance; SE—South Entrance; EE—East Entrance; WE—West Entrance.

11105

Introduction

YELLOWSTONE NATIONAL PARK, dedicated March 1, 1872 by the United States Congress, is the largest as well as the first national park of its kind established in this country.

It is roughly rectangular in shape and has a total area of 3,426 square miles, lying principally in northwestern Wyoming and encroaching slightly upon Montana and Idaho.

The park boundaries were changed by Act of Congress March, 1929, to include the curious Hoodoo formations which were formerly just outside of the eastern park boundary, the deposits of petrifications formerly just outside of the northwestern corner of the park, and several range summits, thus making the borders of the park conform to natural boundary lines.

Within its boundaries are more and greater geysers than in all the rest of the world together, boiling springs and terraces, mud volcanoes and paintpots, the Grand Canyon of the Yellowstone remarkable for its gorgeous coloring, large lakes, many rivers and waterfalls, trout fishing, a vast wilderness comprising one of the greatest wild animal and bird preserves in the world.

The administration of the park is vested in the National Park Service of the Department of the Interior. The Superintendent's office is at Mammoth Hot Springs. Throughout the park at strategic points are many ranger stations used by the National Park Service rangers who not only protect this vast property and its native wild life, but the hundreds of thousands of guests who come from all over the world each year to see it.

Several railroads operate to or near the park boundaries; the northern entrance at Gardiner, Montana, is reached by the Northern Pacific Railway; the western entrance at West Yellowstone, Montana is reached by the Union Pacific System, and by automobile highway through Gallatin Gateway from Bozeman, Montana on the Chicago, Milwaukee, St. Paul and Pacific Railway and the Northern Pacific Railway; the

Burlington Route goes to Cody, Wyoming, 55 miles east of the eastern entrance, and the Chicago Northwestern Railway goes to Lander, Wyoming, 178 miles southeast of the southern entrance.

Automobile highways lead to all four park entrances, at the north, south, east and west; travel to the park by private automobiles exceeds rail travel. Small entrance fees are collected by the government for each automobile and motorcycle entering the park. In order to facilitate traffic and largely eliminate meeting other cars, automobiles go around the Grand Loop Road of the park in the direction opposite to that of the hands of a clock. Careful driving is demanded. A speed of 30 miles per hour is permitted on straight open stretches for passenger cars, but on grades and curves the speed is reduced to 15 miles per hour. At the average elevation of park roads, 7,000 feet, automobile engines function better with a leaner gasoline and air mixture—there is less oxygen in a cubic foot of park air than air at sea level. Drive reasonably; signal on blind turns; keep to your side of the road; park only on straight stretches; watch for other cars, wild animals, horseback riders and hikers, if you would help make park highways safe for others—and for yourself.

It has been said that a hundred feet from the highways one finds a wilderness in the same virgin state in which early explorers found it. The only evidences of civilization are the government buildings, camp grounds, hotels, lodges, shops, highways, trails and telephone lines, all of which are operated to serve park guests.

The government has made available at many places throughout the park large public automobile camp grounds supplied with water, sanitation facilities, and some equipment for the free use of campers. It encourages camping in these areas where water supplies and sanitation are under control and where supplies are at hand; and also to minimize the fire hazard which would result from promiscuous camping in outlying areas that could not be patrolled constantly by National Park Service rangers.

Emulate the American Indian and build small campfires; and extinguish every ember before leaving camp. Beware of tree mold, logs and brush so your fire may be controlled.

Fishing in the lakes and streams is permitted under certain reasonable restrictions, but no hunting whatever is allowed. The trout waters of the Yellowstone are world famous; but one should remember that trout are wild and consequently not easily caught.

The companies operating in the park are authorized and regulated by the government. Suggestions for bettering the various services are welcomed by the companies and by the superintendent of the park. (Postoffice address: Yellowstone Park, Wyoming).

The Yellowstone Park Transportation Company operates a large line of yellow buses to all points in the park from all entrances, and from Gallatin Gateway, Grand Teton National Park, and Cody, Wyoming. Stop-overs may be arranged at any hotel or lodge for those who wish to remain longer than the minimum length of time required to make the "Loop."

The Yellowstone Park Hotel Company operates the Mammoth Hotel, Old Faithful Inn, Lake Hotel and Grand Canyon Hotel at the principal stopping places on the Grand Loop Road.

The Yellowstone Park Lodge and Camps Company operates lodges with cabins at Mammoth, Old Faithful, Lake, Sylvan Pass and Canyon. Roosevelt Lodge, between Canyon and Mammoth, is a place for stop-over patrons, but is not on the regularly prescribed park tours. Housekeeping cabins and cafeterias in the various public automobile camp grounds are operated by this company.

Haynes Picture Shops, Inc., operates overnight photo finishing plants at Mammoth, Old Faithful, Lake and Canyon; and sales stands in all hotels and lodges for the full line of pictures, photographic supplies and books, in addition to several shops in its own buildings in the public automobile camp grounds, and a general store at Tower Falls.

C. A. Hamilton operates general stores at Old Faithful, West Thumb, Lake and Fishing Bridge, and oil and gasoline stations at these points.

G. Whittaker operates general stores at Canyon and Mammoth and oil and gasoline stations at these points.

Pryor and Trischman operate the Park Curio Shop, the Devils Kitchenette and the Cafeteria at Mammoth.

H. Brothers operates bath houses at Old Faithful.

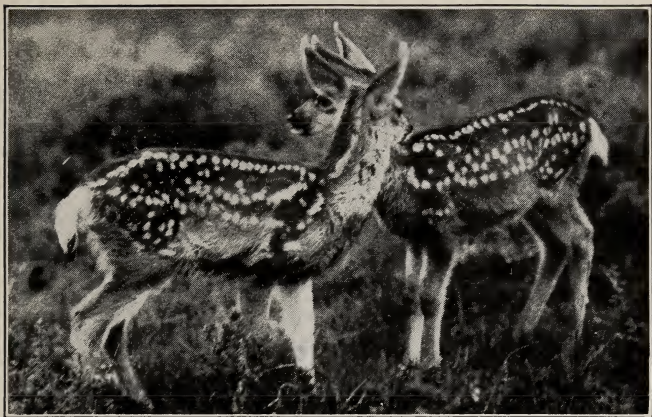
The Yellowstone Park Fuel Company operates fuel yards in the various public automobile camp grounds throughout the park with sawed and split wood in bundles of convenient size for automobile campers.

The Yellowstone Park Boat Company operates speedboats on Yellowstone Lake for excursions and near the lake outlet at Fishing Bridge; and near the Lake Hotel has a number of small boats for hire.

Saddle horses are available at the various hotels and lodges where many desirable trips may be taken to places not accessible by the automobile highways. Competent guides are employed.

The HOWARD EATON TRAIL parallels the Grand Loop Road and leads to the main points of interest at the principal stopping places in the park. It is one of the most scenic trails in America for horseback riders and is a round trip loop of 157 miles. It was named in honor of Howard Eaton, famous western horseman and guide and was dedicated in 1923.

Although unfenced the park is the largest and best wild animal preserve in North America. Being suited to the habits of such a large number of species of large and small animals, it preserves them in their natural state free from molestation by the hunter. With the exception of the mountain lion, wolf and coyote, which are very harmful to the young of the other large animals, especially the young mountain sheep, elk, deer and antelope, all animals that naturally inhabit this remarkable region are protected in every possible way. All hunters and poachers are rigidly excluded, and in winter, when it is difficult to procure forage, the elk and buffaloes are supplied with hay.



MULE DEER FAWNS

24270

Official estimates of the important wild animals of the park according to the most recent census are: elk (Wapiti) 10,600 and in the Jackson Hole herd 19,000; mule deer 800; buffalo (American Bison) 1,097; moose 700; prong-horned antelope 650; black (including brown) bears 450; grizzly bears 160; and big horn sheep 150.

THE BEARS ARE WILD. A park "old timer" voices the feelings of most of the people who have spent several seasons in the park when he says: "Feed the bears? Not I! We who live in the park are AFRAID of them."

The National Park Service, through a corps of ranger naturalists, provides a complete free guide and lecture service available to all guests at the important stops in the park. These ranger naturalists are representatives of the government's information service operated in connection with the museums and information offices. No fees are charged, nor gratuities accepted by ranger naturalists, or any government employees in the park.

It is the duty of the rangers and the ranger naturalists to protect the natural curiosities. Carving or marking on the formations, collecting specimens, throwing things into pools

or craters, and other acts of thoughtlessness would make the problem a difficult one, without the help of park guests who realize that the park must be preserved not only for the next generation, but for all time.

DISTANCES

AUTO APPROACH HIGHWAYS	Miles
Livingston, Montana to Northern Entrance (NE)	59.4
Bozeman, Montana to Gallatin Gateway	14.0
Gallatin Gateway to West Entrance (WE)	84.0
Salt Lake City, to Western Entrance (WE)	380.0
Moran, Wyoming to Southern Entrance (SE)	25.5
Cody, Wyoming to Eastern Entrance (EE)	55.2

THE GRAND LOOP ROAD

(Northern Entrance (NE) to Mammoth Springs (MS) ..	4.5)
Mammoth Springs (MS) to Norris Junction (NJ)	20.3
Norris Junction (NJ) to Madison Junction (MJ)	14.1
(Western Entrance (WE) to Madison Junction (MJ) ..	13.5)
Madison Junction (MJ) to Old Faithful (OF)	16.0
Old Faithful (OF) to West Thumb (WT)	18.9
(Southern Entrance (SE) to West Thumb (WT)	23.6)
West Thumb (WT) to Lake Junction (LJ)	16.9
(Eastern Entrance (EE) to Lake Junction (LJ)	27.0)
Lake Junction (LJ) to Canyon Junction (CJ)	14.3
Canyon Junction (CJ) to Tower Falls Junction (TJ) ..	20.4
(Above is via Dunraven Pass).	
Tower Junction (TJ) to Mammoth Springs (MS)	17.6

AUTO ROUND TRIPS FROM EACH ENTRANCE

Via Northern Entrance	155.4
Via Eastern Entrance	200.4
Via Western Entrance	163.4
Via Southern Entrance	193.6

AUTO SIDE TRIPS

Around Bunsen Peak from Mammoth Springs (MS)	8.0
Canyon Junction (CJ) to Norris Junction (NJ)	11.0
Tower Junction (TJ) to Buffalo Ranch	10.8
Buffalo Ranch to Cook (CC)	23.1

EXPLANATORY NOTE

The Haynes Guide Book is so arranged that it serves equally well from all four park entrances. The tour from the North Entrance at Gardiner, Montana begins on page 17; from the East Entrance, via Cody, Wyoming page 75; from the West Entrance at West Yellowstone, Montana, page 41; and from the South Entrance, via Grand Teton National Park and Moran, Wyoming page 66.

Motorists in using this book are enabled to locate every important object of interest as the mileage reading on the speedometer is indicated after the name of each feature.

Tour From Northern Entrance

(Via Gardiner, Montana)

GARDINER STATION (Mileage begins at Arch) of the Northern Pacific Railway, and the city of Gardiner are just outside of the park at the northern boundary.

THE NORTHERN ENTRANCE ARCH (Mileage 0.0) dedicated by President Theodore Roosevelt on April 24, 1903, bears the memorable inscription taken from the Act of Dedication of the park dated March 1, 1872, "For the benefit and enjoyment of the people."

THE GOVERNMENT CHECKING STATION (Mileage 0.0) is manned by National Park Service rangers who record all cars and motorcycles entering the park, and issue season permits upon payment of the entrance fees prescribed by Congress.

DISTANCES FROM NORTHERN ENTRANCE (NE) at Gardiner, Montana, to points outside of the park: Livingston, Montana 59.4; Glacier National Park via Great Falls, Montana 404; Seattle, Washington 970; St. Paul, Minnesota 1178; Denver, Colorado via Cheyenne, Wyoming 730; Los Angeles, California 1170; Salt Lake City, Utah 432; New York City via East Entrance A. Y. P. and Lincoln Highway 2527 miles.

—to points within the park; Mammoth Springs (MS) 4.5; Norris Junction (NJ) 24.8; Madison Junction (MJ)



ARCH AT NORTHERN ENTRANCE

23303

38.9; Western Entrance (WE) 52.4; Old Faithful (OF) via Black Sand Basin 56.6; West Thumb (WT) 73.8; Southern Entrance (SE) 97.4; Moran, Wyoming (Grand Teton National Park) 122.9; Lake Junction (LJ) via Old Faithful 94.2 (via Norris and Canyon 50.1); East Entrance (EE) via Old Faithful 121.2 (via Canyon 77.1); (Eastern Entrance (EE) to Cody, Wyoming 55.2); Canyon Junction (CJ) via Old Faithful 108.5; Tower Junction (TJ) via Old Faithful and Dunraven Pass 133.3; around the Loop to Mammoth 150.9; park round trip from Northern Entrance (NE) 155.4; to Tower Junction (TJ) via Mammoth 22.1, Buffalo Ranch 32.9, Cooke 56.0 miles.

PARK MILE-POST MARKINGS. The principal symbols are NE (Northern Entrance), MS (Mammoth Hot Springs), NJ (Norris Junction), MJ (Madison Junction), OF (Old Faithful), WT (West Thumb, of Yellowstone Lake), LJ (Lake



PRONG-HORNED ANTELOPE

Junction), CJ (Canyon Junction) TJ (Tower Falls Junction) and CE (Cooke Entrance).

FISH AND FISHING. In the Yellowstone and Gardiner Rivers and other waters in the vicinity of the Northern Entrance to the park are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Rainbow Trout, Scotch Lake (Loch Leven) Trout and Eastern Brook (Speckled) Trout. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana one must have a license. Tackle may be procured at the stores in Gardiner, at the Dude Ranches and at the stores in the park.

PRONG-HORNED ANTELOPE (Mileage 0.1) are frequently seen in bands grazing on the alfalfa field, which is maintained by the National Park Service. These keen-eyed animals, fleet of foot and timid, are found in but few places in the United States; as they do not endure in captivity but must be preserved in their wild state. Unlike the elk, deer and caribou, the antelope are armed with hollow horns, like those of cattle, but unlike cattle they shed their horns each year, a long, pointed, bony horn core, covered by the undeveloped new horn always remaining. Two rabbits, or more properly hares, are found in the park. The **VARYING HARE** or **SNOWSHOE RABBIT** is the common species and is found only at altitudes below 8,000 feet. In autumn its brown summer coat changes to white and gives it continued protective coloration in the snowy landscapes of winter. A rarer species is the **WHITE-TAILED JACK-RABBIT**, which also

assumes a white winter coat, and is unique among our jack-rabbits in this character. It may be distinguished from the varying hare by its white tail and by its longer ears. It inhabits the lower altitudes near the north entrance in the vicinity of Mammoth Hot Springs. REPTILES are rare in the park region and it is a comforting fact that the rattlesnake is not found above 6,000 feet elevation. The average elevation of the park is 8,000 feet.

THE YELLOWSTONE PARK TRANSPORTATION COMPANY'S GARAGE (Mileage 0.2) is seen at the left. It was completed in 1925 as the main Yellowstone Park garage of the company, which operates over three hundred buses and touring cars in the park, connecting with all entrances, and operating also to Gallatin Gateway, Grand Teton National Park and Cody, Wyoming.

GARDINER RIVER (Mileage 0.6) seen at the left, is a tributary of the Yellowstone River. The highway follows the course of this river almost to Mammoth Hot Springs, the park headquarters, five miles distant.

GARDINER CANYON (Mileage 1.3). If the motor labors and seems to have lost its power remember that you are ascending about two hundred feet per mile, although the road appears almost level. The elevation at the arch is 5,313 feet and at Mammoth Hot Springs, 6,238 feet.

EAGLE NEST ROCK (Mileage 1.5) high up on the cliff at the left supports an osprey's nest which is five feet in diameter and is inhabited every year.

MOUNT EVERTS (Mileage 2.8) is seen at the left, the most prominent sedimentary deposit (Cretaceous period) in the park. It was named for Truman C. Everts, who was lost in the region for thirty-seven days in 1870, after he became separated from the other members of the Washburn-Langford party.

MONTANA-WYOMING STATE LINE (Mileage 3.0) is indicated by a sign at the left of the road, about a hundred yards past the bridge. This state line is exactly half way between the north pole and the equator (45° north latitude), the same latitude as Bordeaux, Venice and Vladivostok.

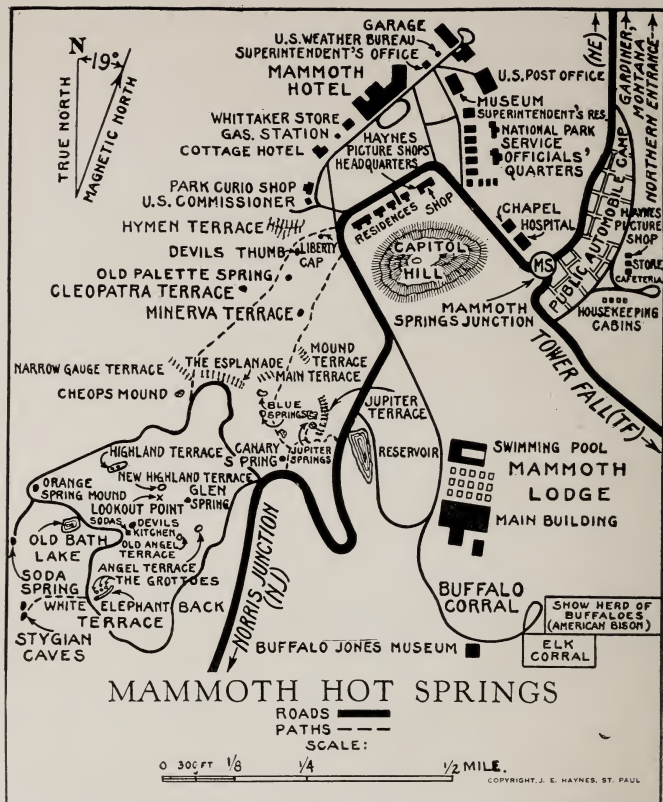
BOILING RIVER (Mileage 3.6) enters the Gardiner River in the bottom of the valley at the left, at the foot of Mount Everts. On cool days steam is seen rising from this strange under-ground stream which is about six feet wide and a foot deep, and almost boiling hot.

MAMMOTH PUBLIC AUTOMOBILE CAMP (Mileage 4.3) is maintained by the Government, which supplies water, sanitation facilities and other conveniences. Nearby are the Government's trout rearing ponds and the following utilities of various companies operating under government franchise throughout the park: housekeeping cabins, cafeteria, stores, fuel yard and Haynes Picture Shop (overnight photo finishing service).

MAMMOTH HOT SPRINGS JUNCTION (Mileage 4.5) (Symbol MS). The left road comes from Tower Falls; turn right to Park Hospital, Chapel (undenominational), Haynes Picture Shop headquarters, Post Office, Museum and Information Office, Superintendent's Office, Mammoth Hotel, Stores, Terraces, Mammoth Lodge and Buffalo Corral, at Mammoth Hot Springs.

DISTANCES FROM MAMMOTH SPRINGS (MS) to Northern Entrance (NE) 4.5; to Western Entrance (WE) 47.9; to Old Faithful (OF) 52.1; to West Thumb (WT) 69.3; to Moran, Wyoming (Grand Teton National Park) 118.4; to Tower Junction (TJ) 17.6; to Buffalo Ranch 28.4; to Cooke, Montana 51.5; to Lake Junction (LJ) via Norris and Canyon 45.6; to Cody, Wyoming via Norris, Canyon and Lake 127.8 miles.

OLD FORT YELLOWSTONE (Mileage 4.6) a military post for many years was abandoned by the army in favor of the National Park Service officers, rangers, ranger naturalists and their families who now occupy all of these buildings. The National Park Service, a civilian organization under the Department of the Interior, was created by an Act of Congress signed August 25th, 1916 by President Woodrow Wilson. The Service has the responsibility of administering all of the national parks and national monuments in the United States, Alaska and Hawaii.



HAYNES PICTURE SHOPS HEADQUARTERS (Mileage 4.7), at the left, was completed in 1929, replacing, but on a different site, the first Haynes Shop erected in the park at Mammoth Hot Springs in 1884. At all of the Haynes Picture Shops in the park in the hotels, lodges and automobile camp grounds the traveler finds a large assortment of pictures in all forms and sizes, complete stocks of films and other supplies, books, and overnight photo finishing service (except

at Tower Falls). This shop at Mammoth besides the retail establishment houses the business headquarters of the company in the park.

UNITED STATES POST OFFICE (Mileage 4.8) until 1928 was the only Post Office in the park; in that year five contract postal stations were established at the principal stopping places in the park, and in 1929 a postal sub-station was established to replace the contract at Old Faithful, due to the great volume of business there.

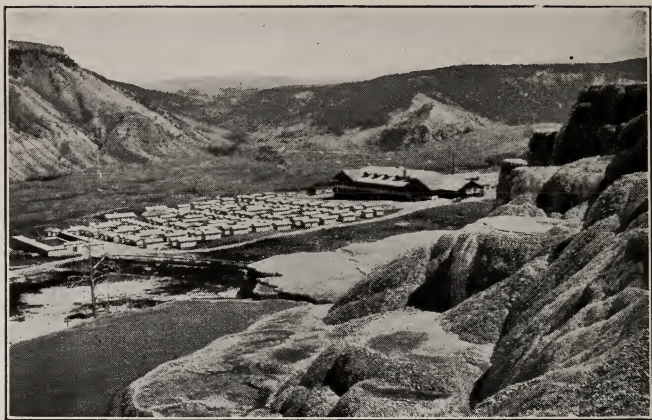
THE HOUSE OF HORNS (Mileage 4.8) built wholly of horns and antlers by Sam T. Woodring in 1928, interests thousands of park visitors. The moose shed their antlers in December and January, the antelope shed the outer sheath of their horns in December, the elk shed in February and March, and the deer in January and February.

MUSEUM AND INFORMATION OFFICE (Mileage 4.8) houses a wonderful collection of scientific and historical exhibits under the direct charge of the park naturalist, and the Information Office where ranger naturalists are always on duty to give information and directions about the park. Besides free pamphlets distributed through this office they have for sale Government and other publications for convenience of park guests. The Museum is free to the public as are all of the guided trips and lectures conducted throughout the park by ranger naturalists. Branch museums are at Norris Geyser Basin, Madison Junction and Old Faithful.

MAMMOTH HOTEL (Mileage 4.9) situated just south of the PARK SUPERINTENDENT'S OFFICE is operated by the Yellowstone Park Hotel Company which has its business headquarters in this hotel. The other hotels operated by the company are the Old Faithful Inn, Lake Hotel and Grand Canyon Hotel.

WHITTAKER'S STORE AND GAS STATION (Mileage 5.0) is just beyond Mammoth Hotel. George Whittaker operates general stores and gas stations here and at Grand Canyon, carrying a full line of supplies for tourists.

PARK CURIO SHOP (Mileage 5.1) is operated by Mesdames Pryor and Trischman, who also operate the cafeteria



MAMMOTH HOT SPRINGS LODGE FROM JUPITER TERRACE

23295

in the Mammoth Automobile Camp, and the "Devils Kitchenette" high up on the Mammoth Terraces.

CAPITOL HILL, across the flat from Mammoth Hotel, is a glacial moraine (the dumping ground of a glacier). The first superintendent's office was a block house built on top of Capitol Hill in 1879, while Indians were still hostile to the whites. It was razed in 1909.

HYMEN TERRACE (Mileage 5.2) is at the foot of CLEMATIS GULCH, in which gulch the first building in the park was erected. It was a log cabin built by a pioneer by the name of McCartney, and was the scene of early Indian encounters. Hymen Terrace, one of the most beautifully colored spots in the park, like all the terraces at Mammoth is composed of calcium carbonate called travertine, which is brought to the surface from buried limestone beds by the hot water.

LIBERTY CAP (Mileage 5.3) is the cone of an extinct hot spring, thirty-eight feet high and twenty feet in diameter at its base. CLEOPATRA TERRACE and MINERVA TERRACE are reached by foot paths from here; and MOUND TER-



"SHOW" HERD OF BUFFALOES AT MAMMOTH

10136

RACE (Mileage 5.4) is the high terrace promontory at the right.

MAMMOTH LODGE (Mileage 5.5) is at the foot of JUPITER TERRACE, the largest terrace in the world. Mammoth Lodge is one of six similar lodges operated by the Yellowstone Park Lodge and Camps Company, which has its business headquarters in Mammoth Lodge. This company operates housekeeping cabin units in the various public automobile camp grounds and cafeterias at Old Faithful, West Thumb, Fishing Bridge and Grand Canyon.

BUFFALO CORRAL (Mileage 6.0) is reached by a side-road leading south from Mammoth Lodge. Here are kept several fine buffalo (American Bison) so that all park visitors will have the opportunity of seeing these interesting animals, which represent perhaps the stateliest species of hoofed animals in America. This show herd is in a fenced area; but the Lamar Valley herd of about one thousand buffalo ranges at liberty in the area east of the Buffalo Ranch, reached on the road to Cooke. The mountain herd, which is comparatively small, ranges near the headwaters of Pelican Creek, northeast of Yellowstone Lake.



BUFFALO BULL (AMERICAN BISON)

21202

JUPITER TERRACE (Set speedometer back to 5.5), as before noted, is the largest travertine terrace in the world. The colored coverings are composed of algae (a low form of plant life, which thrives in the hot and tepid waters). Dr. Eugene T. Allen, famous chemist, is authority for the following statements: that the heat is assumed to be the internal heat of the earth, brought up to the surface through deep cracks, mostly in the form of steam; that the water is chiefly derived from rain and snow to which is added the condensed steam, so a little of the water comes from great depths; that the calcium carbonate comes from buried limestone beds, solution of the limestone taking place below the ground by water charged with volcanic gases; that the escape of carbon dioxide gas from the hot spring waters is the most important factor responsible for the deposition of travertine (which carbon dioxide gas comes from the rising



ORANGE SPRING FORMATION

19014



ANGEL TERRACE

19016

volcanic gases); that the rate of deposition varies all the way from little or nothing to more than a foot a year.

SIDE-ROAD (Mileage 6.0). A loop side-road to the right leads to **NARROW GAUGE TERRACE**, **ORANGE SPRING MOUND**, **OLD BATH LAKE**, **DEVILS KITCHEN**, **WHITE ELEPHANT BACK TERRACE**, and near **STYGIAN CAVE**, to **ANGEL TERRACE**, thence to the main road at the point of leaving it. This side trip is well worth while as the variety of features is great and no one should leave Mammoth Hot Springs without going down in the Devils Kitchen which is the interior of an extinct hot spring.

PHOTOGRAPHING. Ray filters are advantageous in photographing yellow buses, geysers and distant mountains. Snapshots and movies of the terraces are usually over-exposed, while close-ups of bears and buffalo are usually under-exposed due to their dark, non-actinic color. Be sure to get side-lightings on Liberty Cap and the terraces; and photograph the House of Horns, the Old Stagecoach, your party at Liberty Cap and the buffalo.

ANGEL TERRACE (After returning to main road turn right, south, a few rods to a turn opposite Angel Terrace, and reset speedometer at this point at 6.1).

MULE DEER are usually seen along this section of the highway and attract considerable attention on the part of the traveler. The mule deer has large antlers which fork



A MULE DEER BUCK

dichotomously, in shape like two Y's on each horn. Its coat is gray brown in summer and steel gray in winter.

AUTO SIDETRIP FROM MAMMOTH. A one hour trip which is well worth taking is to Golden Gate and Swan Lake Flat on the main highway taking the left side road immediately upon entering Swan Lake Flat. This road leads around Bunsen Peak to the rim of the tremendous canyon of the Gardiner River affording a good view of Osprey Falls and a splendid birds-eye view of Mammoth Hot Springs with Sepulcher Mountain at the left, Sheep Mountain in the center distance and Mount Everts at the right all covered in a drive of about ten miles (this is a one-way road). On the return trip the road leads past the Buffalo Corral and Mammoth Lodge to the foot of Jupiter Terrace.

HORSEBACK TRIPS FROM MAMMOTH. Ten mile round trip to summit of Mount Everts elevation, 7,900 feet. Ten mile round trip to Gardiner, Montana via old road. Twelve mile round trip around Bunsen Peak to foot of Osprey Falls. Fourteen mile round trip to summit of Mount Sepulcher, elevation 9,500 feet. Twenty-eight mile round trip to Sports-

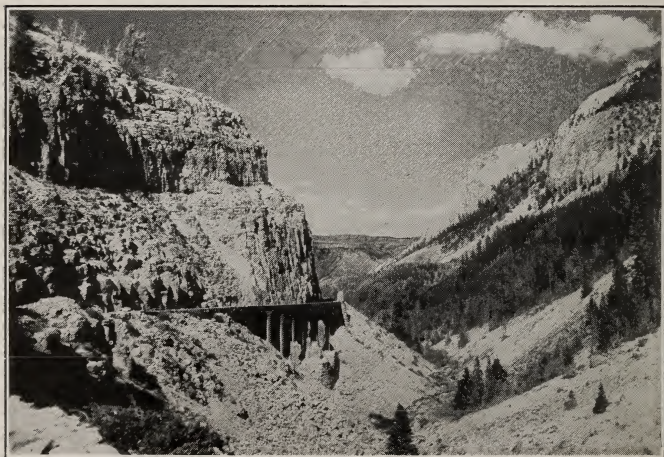


HOODOOS NEAR SILVER GATE

man Lake. Five mile round trip over the Ranger Nature Trail.

THE TIMBER WOLF is present in the park in very limited numbers. It is seldom seen, and does not increase because of the vigilance of the rangers. COYOTES, like the mountain lion, prey upon the young of many valuable species; they too are shot on sight by the rangers in the park. They are numerous in the lower altitudes of the park; not infrequently their dog-like yelping is heard in the vicinity of the hotels. Washouts and holes in the sides of ravines furnish dens for the coyote. They multiply with comparative rapidity, having from five to seven puppies each year.

SILVER GATE AND HOODOOS (Mileage 7.8). The highway from Mammoth Hot Springs to Golden Gate ascends so gradually that one does not realize that in three miles a thousand feet in elevation is gained. In the midst of the travertine Hoodoos the highway makes an abrupt turn between great blocks of travertine, which are of light gray color, called at this point Silver Gate.



GOLDEN GATE CANYON



BUNSEN PEAK FROM BIGHORN PASS

27284

GOLDEN GATE (Mileage 8.7) is one of the most picturesque drives in the entire park. The sides of the rhyolite walls rise two hundred to three hundred feet above the highway, and are partly covered with yellow lichens, which suggested the name Golden Gate. This pass was originally called Kingman Pass for Dan C. Kingman, one of the early Government engineers in charge of park road construction. RUSTIC FALLS, at the upper end of Golden Gate Canyon adds a charm to this beautiful spot. This fall of Glen Creek is sixty feet high.

SWAN LAKE FLAT (Mileage 8.9) is immediately beyond Golden Gate. After crossing Glen Creek one sees at the extreme right ELECTRIC PEAK which is the highest mountain in the park. Its elevation is 11,155 feet. In the middle right distance are four apparently united peaks, at the left of Antler Peak which stands alone and Quadrant Mountain at

the right. The four peaks at the left, reading from left to right are Trilobite Point, Mount Holmes, and Dome Mountain (showing two peaks).

SWAN LAKE (Mileage 9.8) is seen at the right of the road. Geologists say that this lake once covered the whole of Swan Lake Flat. This is a spring-fed lake which is devoid of fish life.

Along the park highways the PINE SQUIRREL is often seen, while the CHIPMUNK is likewise abundant. The KENNICOT SPERMOPHILE or PICKET-PIN GROUND SQUIRREL lives in the open country in places like Swan Lake Flat, and is seldom seen in rocky places or in the trees. This species hibernates even longer than the woodchuck, while the other squirrels hibernate little or not at all.

The WOODCHUCK or GROUND HOG is a rodent with a squirrel-like face and long incisors for gnawing. He is much larger than any squirrel and is of a rich brown color. He is often seen by the roadside sunning himself near his burrow. In autumn he does not store up a winter's supply of provisions like the squirrel, but takes on a quantity of fat under the skin, then goes quietly to sleep in his burrow for four or five months when the winter is severest, hibernating like the bear.

In the willows and marshy places along OBSIDIAN CREEK it is not unusual to see occasional MOOSE, which also frequent the area about Yellowstone Lake and the upper Yellowstone country south of the lake. The most famous but least known member of the cat family in North America is the PUMA, or MOUNTAIN LION; it makes its den among the rocks or in the dense forests and preys upon every creature that can be killed and eaten, doing much harm to young elk, deer, mountain sheep and antelope. The mountain lion is a good climber; it is tall for its weight, flat sided and on an average above seven feet long from tip to tip. In color it is a brownish drab. On account of the diligent work on the part of the park authorities this harmful animal is reduced to a small number in the reserve. BOBCATS and LYNXES also occur in the park in small numbers.



SEMI-CENTENNIAL GEYSER, AUG. 14, 1922

22626

APOLLINARIS SPRING (Mileage 15.4) is a few feet at the left of the main road, and is reached by ascending the stone steps. Across the road is a small automobile camp ground. Bears are learning that tourists often have candy and other tid-bits with them which accounts for the fact that one seldom passes this point without being held up by them.

OBSIDIAN CLIFF (Mileage 16.8) while stony in appearance, being principally rhyolite, will reveal upon close inspection a large percentage of volcanic glass, chips of which when held against the light are almost transparent. Indians used this glassy material quite generally for making arrow and spear heads, as well as skinning knives. Generally speaking, it is black but some specimens of red obsidian have been found here. In front of Obsidian Cliff is a large marshy area which was once the rendezvous of many beavers and muskrats. The BEAVER is celebrated for his engineering skill in building dams, some of great extent. He constructs a water entrance to his house and a place below the freezing line for his winter supply of food. The favorite bark prized by beavers in the park is the aspen. The MUSKRAT is found along

the banks of streams where burrows can be made conveniently. It is quite as much at home in the water as the beaver, and like the beaver has a powerful tail which serves as a rudder in swimming.

SEMI-CENTENNIAL GEYSER (Mileage 19.9) broke out August 14, 1922 in the large crater at the right of the road. The initial eruption threw mud and rocks in every direction and endangered traffic on the highway. After a few spectacular eruptions one of which was 300 feet in height it subsided and has not since played.

ROARING MOUNTAIN (Mileage 20.3) is seen at the left steaming from countless openings in its furrowed sides. Its ashen color and the muffled sound of escaping steam make this sight one to be long remembered. Near the highway at the base of the mountain are greenish milky pools fed by rivulets of sulphur water from the springs.

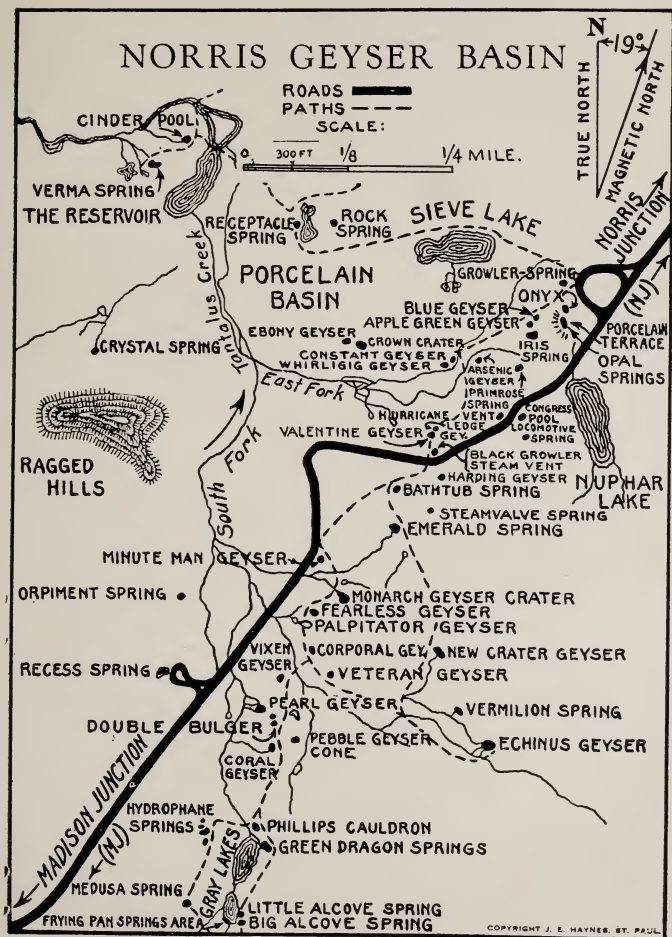
TWIN LAKES (Mileage 20.8 and 21.1) although situated close to one another are at different elevations and have distinctly contrasting colors. Neither of these has fish life.

BIJAH SPRING (Mileage 21.9) is seen at the right of the highway.

FRYING PAN SPRING (Mileage 22.7) adjacent to the highway at the right is interesting in that its shallow, hot water is kept constantly agitated by steam and other gases issuing through hundreds of openings.

NORRIS RANGER STATION (Mileage 24.4) and NORRIS PUBLIC AUTOMOBILE CAMP. Here we cross the GIBBON RIVER which flows in a southerly direction and joins the Fire-hole River. These two streams form the Madison River at National Park Mountain.

NORRIS JUNCTION (Mileage 24.8) (Symbol NJ) is the junction of the Grand Loop Road with the Canyon-to-Norris cut-off which cut-off is a service road. Take the right hand road to NORRIS GEYSER BASIN (Mileage 25.1), which was named for Philetus W. Norris, park superintendent from 1877 to 1882. Guests traveling by the yellow buses leave them here and walk from the PORCELAIN TERRACE past the many interesting springs and geysers to the Black Growler





CONSTANT GEYSER, NORRIS GEYSER BASIN

10083

steam vent near the Norris Museum where they are joined by the buses. The footpath leads past the BLUE GEYSER, APPLE GREEN GEYSER, CONSTANT and WHIRLIGIG GEYSERS, to the LEDGE and VALENTINE geysers then to the BLACK GROWLER STEAMVENT.

NORRIS MUSEUM (Mileage 25.4), completed in 1930, is the information headquarters for Norris Geyser Basin. It is operated by the National Park Service for the free use of all visitors. From here a trail leads in a southeasterly direction past BATHTUB SPRING and EMERALD SPRING to the NEW CRATER GEYSER, ECHINUS GEYSER and the Gray Lakes area in which there are many interesting sights.

The principal erupting geysers at Norris Geyser Basin are the Constant, Minute Man, New Crater, Whirligig, Valentine, Vixen and Echinus.

PHOTOGRAPHING. Remember to use the ray filter to darken the sky behind the steam columns. Do not attempt to photograph erupting geysers or steam vents without direct sunlight; and be sure that the sun is at your side, and not behind you. Remarkable effects have been secured in photographing steam columns directly toward the sun but be sure



GRAY LAKES

26408

that the seam obstructs the light. General views of Norris Basin are usually over-exposed. Excellent stills of geysers are made with filter at $1/25$ th of a second in good light at F11 or without a filter, at F16. Take movies of geysers at about F11 with 2X filter.

MINUTE MAN GEYSER (Mileage 25.7) is in the foreground at the left. It erupts so frequently that no one should fail to see it. At the foot of the distant hillside is the crater of the now extinct MONARCH GEYSER which was active for about twenty-five years.

RECESS SPRING (Mileage 25.9) is reached by a spur road to the right. At the left of the main highway at this point a trail leads to the Gray Lakes area where are situated PHILLIPS CAULDRON, GREEN DRAGON SPRING, the GRAY LAKES, the BIG AND LITTLE ALCOVE SPRINGS and MEDUSA SPRING.

ELK PARK (Mileage 26.4) (Unnamed hot spring at left). This meadow is a favorite feeding ground of the AMERICAN ELK or WAPITI of which there are in the park about, 10,600. The elk is as tall as a horse, handsomely formed, has a luxurious mane and imposing antlers. Even the young of this



MONUMENT GEYSER BASIN

26398

species are stately; they "step about with the air of a game cock." It seems remarkable that antlers of such great size can be grown to maturity in a few months, to be lost and regrown each year. The Gibbon River is seen at the right (Mileage 27.4).

The highway continues slightly down grade along the Gibbon River in which at the right is seen DUCK ROCK (Mileage 27.7), a huge boulder balanced on a water-eroded pedestal which appears hardly strong enough to support the tremendous weight.

CHOCOLATE POTS (Mileage 27.9) are seen on both sides of the Gibbon River and under the water in midstream. These unique cone-shaped formations colored a reddish brown attract considerable attention.

GIBBON MEADOW (Mileage 28.3) is a flat grassy valley bottom surrounded by low mountains. Through this valley winds the Gibbon River just before entering the Gibbon Canyon.

ARTISTS PAINTPOTS (Mileage 29.1) are reached by a trail leading to the left one-half mile distant at the foot of Paintpot Hill.

MONUMENT GEYSER BASIN near the top of the right knoll is at an elevation six hundred and fifty feet higher than the highway at this point. To reach this interesting geyser basin cross the footbridge over the Gibbon river at the right. (Mileage 29.7.) At this point a blazed trail leads up the slope to the Monument Geyser Basin,—one should allow one or two hours for this hike. In addition to several high bottle-shaped geyser cones some of which are inactive there are several fumaroles and large sulphur springs.

We now enter the GIBBON CANYON named for General John Gibbon who explored it in the early days. The canyon walls in places rise a thousand feet above the river.

BERYL SPRING (Mileage 30.2) is the largest boiling spring in Gibbon Canyon. Dense steam clouds from this fifteen foot cauldron frequently envelop the highway.

GIBBON FALLS (Mileage 33.7) is viewed from above. The water tumbles in a foamy torrent down a steep cascade on one side and flows in a thin shiny ribbon on the other. It is difficult to realize when looking down on this waterfall that it is 84 feet high.

TERRACE SPRING (Mileage 37.9) is a very large lake of boiling water at a point where the highway makes an abrupt turn. All along the runways leading from this lake are deep brown colorings consisting of algae, the same low form of plant life that is responsible for the terrace colorings at Mammoth Hot Springs.

MADISON JUNCTION (Mileage 38.9) (Symbol MJ) is 13.5 miles from the west entrance at West Yellowstone and 16 miles from Old Faithful (left hand road). At this point the Gibbon and Firehole rivers join to form the Madison River.

(For continuation of trip to Old Faithful turn to page 44).

Precise Elevations

ELEVATIONS AT PARK ENTRANCES:

	FEET
Northern Entrance at Checking Station	5,313
Eastern Entrance at Checking Station	6,950
Western Entrance at Checking Station	6,688
Southern Entrance N. E. of Checking Station	6,882

ELEVATIONS ON GRAND LOOP ROAD:

Mammoth Hot Springs Museum	6,238
Golden Gate, Kingman Pass	7,255
Norris Junction	7,483
Madison Junction	6,804
Old Faithful, at Old Faithful Geyser	7,365
Continental Divide (first crossing)	8,261
Continental Divide (second crossing)	8,364
West Thumb Junction, near Ranger Station	7,782
Yellowstone Lake	7,730
Lake Junction	7,791
Sylvan Pass	8,559
Canyon Junction	7,733
Dunraven Pass	8,859
Mount Washburn, at the Lookcut	10,317
Tower Falls Camp Ground	6,597
Tower Junction	6,264

ELEVATIONS OF PRINCIPAL MOUNTAINS:

	FEET		FEET
Mount Everts	7,900	National Park Mt.,	7,500
Sepulchre Mountain	9,500	Mount Haynes	8,000
Terrace Mountain	8,100	Mount Humphrey	11,000
Bunsen Peak	9,100	Mount Sheridan	10,250
Electric Peak	11,155	Colter Peak	10,500
Trilobite Point	9,900	Mount Langford	10,600
Mount Holmes	10,300	Top Notch Peak	10,000
Dome Mountain	9,900	Dunraven Peak	9,700
Antler Peak	10,200	Mount Washburn	10,317
Quadrant Mountain	10,200	Cook Peak	9,500

Tour From Western Entrance

(Via West Yellowstone, Montana)

WEST YELLOWSTONE STATION (Mileage begins at Arch) of the Union Pacific System and the city of West Yellowstone are just outside of the park at the western boundary. The railroad branch to this point was completed in 1907.

GALLATIN GATEWAY, MONTANA, the terminus of the Chicago, Milwaukee, St. Paul and Pacific Railway is 14 miles from Bozeman, Montana, on the Northern Pacific Railway and 84 miles from the Western Entrance. From Gallatin Gateway and West Yellowstone station the Yellowstone Park Transportation Company operates daily bus service to and from the park.

THE WESTERN ENTRANCE ARCH AND CHECKING STATION (Mileage 0.0) are beautifully situated in a lodgepole pine forest known as CHRISTMAS TREE PARK. The National Park Service rangers record all cars and motorcycles entering



WEST YELLOWSTONE STATION, UNION PACIFIC SYSTEM



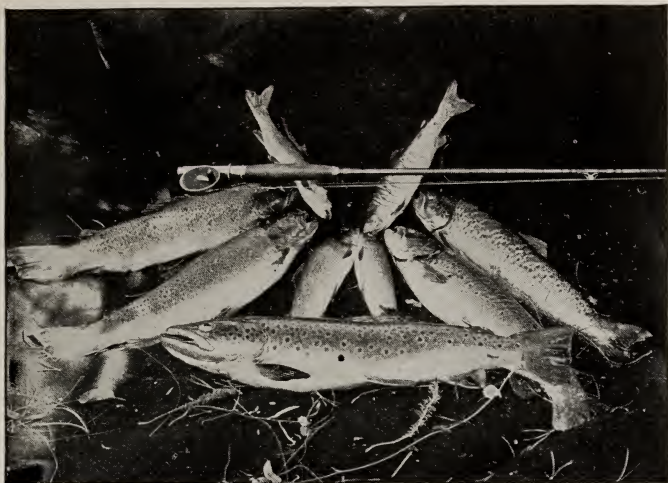
MOUNT HAYNES IN MADISON CANYON

the park and issue season permits upon payment of the entrance fees prescribed by Congress.

DISTANCES FROM WESTERN ENTRANCE (WE) at West Yellowstone, Montana, to points outside of the park: Salt Lake City, Utah 380; Gallatin Gateway 84; Bozeman, Montana 98; Los Angeles, California 1119; New York City via East Entrance, A. Y. P. and Lincoln Highway 2536 miles.

—to points within the park: Madison Junction (MJ) 13.5; Old Faithful (OF) 31.2; West Thumb (WT) 48.4; Southern Entrance (SE) 72.0; Moran, Wyoming (Grand Teton National Park) 97.5; Lake Junction (LJ) 58.8; Cody, Wyoming 141.0; Canyon Junction (CJ) via Old Faithful 73.1; Tower Junction (TJ) via Old Faithful and Dunraven Pass 97.9; Mammoth Springs (MS) via Old Faithful and Lake 115.5, via Norris Junction direct 47.9; park round trip from Western Entrance (WE) 163.4.

PARK MILE-POST MARKINGS. The principal symbols are WE (Western Entrance), MJ (Madison Junction), OF (Old Faithful), WT (West Thumb of Yellowstone Lake), LJ (Lake Junction), CJ (Canyon Junction), TJ (Tower Falls



TROUT FROM THE MADISON RIVER

13089

Junction), CE (Cooke Entrance), MS (Mammoth Hot Springs), NJ (Norris Junction).

FISH AND FISHING. In the Madison River and other waters in the vicinity of the West Entrance are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Scotch Lake (Loch Leven) Trout, European Brown (Brown, Von Behr) Trout, Lake (Mackinaw) Trout, Eastern Brook (Speckled) Trout, Rainbow and Steelhead Trout, Montana Grayling and Rocky Mountain Whitefish. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana and Idaho one must have licenses. Tackle may be procured at the stores in West Yellowstone, at the Dude Ranches and at the stores in the park.

MOUNT HAYNES (Mileage 10.3) is a bold escarpment to the south rising to an elevation of 8,000 feet which was named for the late Frank Jay Haynes pioneer park photographer and stage line operator who was connected with the park for 40 years (1881 to 1920).



NATIONAL PARK MOUNTAIN

20020

MADISON JUNCTION (Mileage 13.5) (Symbol MJ) is 38.9 miles from the northern entrance at Gardiner, Montana and 16 miles from Old Faithful (right hand road).

(For continuation of trip to Old Faithful set speedometer at Madison Junction at 38.9).

NATIONAL PARK MOUNTAIN (Mileage 38.9) at Madison Junction was named to commemorate the birth of the national park idea September 19, 1870 at this point in the camp of the Washburn-Langford Expedition.

MADISON JUNCTION MUSEUM (Mileage 38.9) faces down the Madison River. From this point National Park Mountain is at the left, Purple Mountain at the right and Mount Haynes in the distance ahead. This museum is operated by the National Park Service for the free use of park visitors; it was completed in the fall of 1929.

MADISON JUNCTION PUBLIC AUTOMOBILE CAMP at this point is considered one of the most beautiful sites in the region, but on account of its proximity to Old Faithful it is one of the smaller camps in point of patronage.



IMPERIAL GEYSER

28101

Immediately upon leaving Madison Junction the highway leads up the Firehole River through the FIREHOLE CANYON, one of the most beautiful drives on the Grand Loop Road which was completed in the fall of 1928 replacing a very crooked and steep stretch of road.

FIREHOLE CASCADE (Mileage 41.2) is at the south end of the Firehole Canyon where a short halt is usually made.

FOUNTAIN FREIGHT ROAD (Mileage 44.5) is a sideroad leading to the Imperial Geyser. One cannot drive nearer to this new geyser than about half a mile.

IMPERIAL GEYSER, about two miles west of Excelsior Geyser, broke out in July 1928. Eruptions are 65 to 100 feet high, last about two hours, and occur about twice in 24 hours.

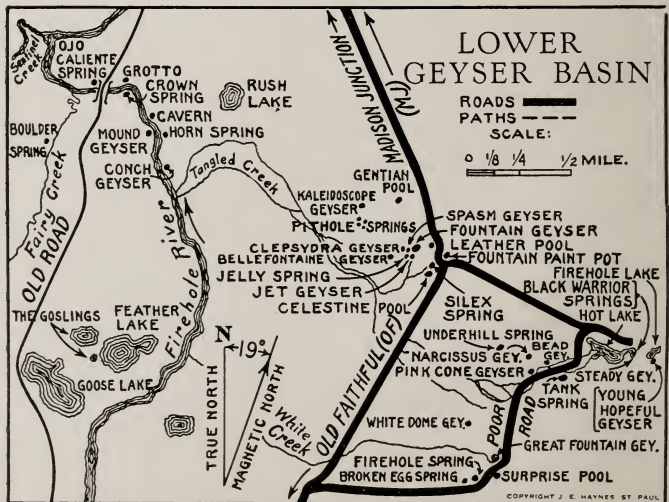
NEZ PERCE CREEK (Mileage 45.2) made famous by the Nez Perce Indians headed by Chief Joseph on their memorable raid through the park in 1877.

We are approaching the LOWER GEYSER BASIN, a wide valley having an area of ten or twelve square miles in which Dr. F. V. Hayden in his official survey of the region catalogued 693 hot springs.



FOUNTAIN PAINT POT

13009

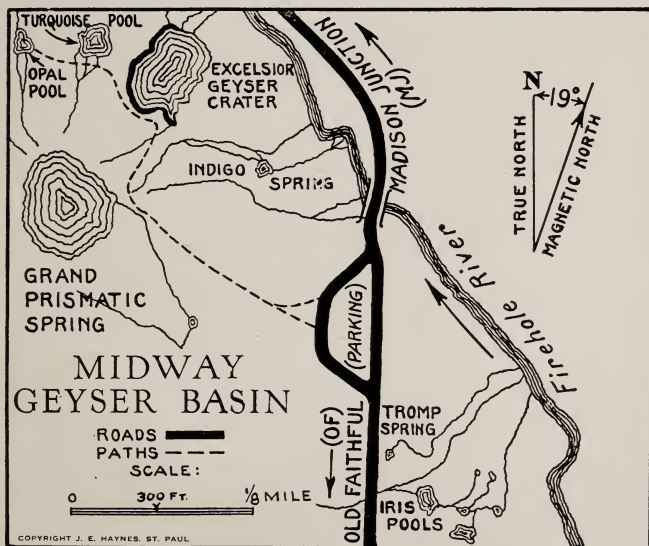


FOUNTAIN PAINTPOT (Mileage 46.9) is a boiling mud cauldron of tinted clay 40x60 feet in size surrounded on two sides by a rim four or five feet high.

PHOTOGRAPHING. Do not attempt to photograph the Fountain Paintpot except in bright sunlight with the sun at your side (not at your back). Take movies at F16 and stills at 1/25 of a second at F16 without filter. Remember geysers and steam are best photographed with a side-lighting. The Paintpot does not require a filter but geyser pictures are improved by its use.

FOUNTAIN GEYSER which plays at irregular intervals to a height of 75 feet is one hundred yards west of the Fountain Paint Pot and is reached by a footpath. Near the Fountain Geyser are several smaller vents, one called **CLEPSYDRA GEYSER** is worthy of notice.

ROAD JUNCTION (Mileage 47.0). The main road turns right. The left side-road leads to **BLACK WARRIOR SPRINGS**,





EXCELSIOR GEYSER, 300 FEET. CEASED TO PLAY IN 1890

10094

STEADY GEYSER, FIREHOLE LAKE, GREAT FOUNTAIN GEYSER which plays 150 feet high for 45 to 60 minutes at intervals of eight to twelve hours, SURPRISE POOL and Firehole Spring. This side-road makes a loop of 3.3 miles and re-enters the main road about 1.2 miles beyond this junction.

EXCELSIOR GEYSER CRATER OVERFLOW (Mileage 49.3) is seen enveloped in steam on the opposite side of the Firehole River.

MIDWAY GEYSER BASIN (Mileage 49.5) has a large parking area at the right of the highway. Within walking distance one may visit the GRAND PRISMATIC SPRING, one of the largest and most beautiful hot springs in the entire park, INDIGO SPRING (at the right 100 yards), Excelsior Geyser Crater, Turquoise Pool and OPAL POOL.

EXCELSIOR GEYSER CRATER is a large pit formerly known as "Hells Half Acre." Superintendent Norris in 1881 named

this geyser Excelsior on account of the tremendous eruptions which he witnessed that year. The water was thrown from 75 to 250 feet in height at irregular intervals. In 1888 the intervals varied from an hour to two hours. A column of water 200 feet in diameter was thrown into the air with each eruption. This geyser which ceased to play in 1890 is the greatest geyser on record in the park.

TURQUOISE POOL situated 150 feet north of Excelsior Geyser Crater is a silent pool about 100 feet in diameter which is remarkable for its beautiful, blue translucent water.

BISCUIT BASIN (Mileage 52.7) and JEWEL GEYSER are on the west side of the Firehole River, and are reached by a footpath. SAPPHIRE POOL has a highly ornamented margin consisting of hundreds of small biscuit-like knobs of silicious sinter, called geyserite.

JEWEL GEYSER (Mileage 52.7) erupts every three to five minutes to a height of 20 feet.

BLACK PEARL GEYSER (Mileage 52.7) is a little spouter that has a beautiful basin studded thickly with small black knobs each about a quarter of an inch in size. Its formation surrounds the roots and stump of a tree completely encrusting it with black pearls.

SILVER GLOBE SPRING (Mileage 52.7) derives its name from the large silvery bubbles of gas which are constantly rising to the surface of the hot water.

GEM POOL (Mileage 53.0) is the larger blue pool of a group of several at the right of the main highway at this point.

ARTEMISIA GEYSER (Mileage 53.1) is down the hill on the right side of the highway. Its crater is 60 feet across and is ornamented with geyserite of an olive green color. Eruptions occur at intervals of 24 to 30 hours to a height of 50 feet and last for ten to fifteen minutes.

Turn right on side road (Mileage 53.2) to the world famous MORNING GLORY POOL (Mileage 53.5). The symmetrical shape and funnel-like crater filled to the brim with transparent blue water presents a spectacle when in the full sunlight long to be remembered. Unless the sun is shining



MORNING GLORY POOL

16049

across the river to a height of a hundred feet, the duration being fifteen minutes. This is one of the most spectacular geysers in the park and should be seen in eruption by every park visitor. For 20 to 30 minutes before each eruption the crater overflows so if you observe this be sure to wait for the eruption.

You are now in UPPER GEYSER BASIN the greatest geyser basin in the world. Within an area of two and a quarter square miles are 26 erupting geysers and more than 400 fumaroles and hot springs. The highest geyser, the Giant and the most famous geyser, Old Faithful are in this basin. Anyone who spends a day here may see the following geysers in eruption at least once and some of them several times, Old Faithful, Riverside, Daisy, Grotto, Lion and probably the Grand all of which are described within the next few pages.

At the right beyond the bridge is CHAIN LAKE and at the left a large mineral spring, the SPA.

GROTTO GEYSER (Mileage 53.7) has a curious cone which looks as though it had been formed around the roots of a large



GROTTO GEYSER FORMATION

14029

overturned tree. It plays 30 feet high at intervals of two to five hours. Eruptions last from a quarter of an hour to eight hours.

Nearby is the ROCKET GEYSER which plays at irregular intervals 50 feet high; duration two to three minutes.

Road Junction (Mileage 53.8). From here may be observed at the left the large cone of the GIANT GEYSER, highest in the world which plays for an hour and a half every six to fourteen days to the amazing height of 250 feet. Three small geysers are on the same mound with the Giant; the BIJOU, MASTIFF and CATFISH.

Take right hand road that reenters the main highway again before reaching Old Faithful. This side road leads to the Daisy Geyser, Punchbowl Spring, Rainbow Pool, Emerald Pool and several other features.

DAISY GEYSER (Mileage 53.9) plays 70 feet high for three minutes every 80 to 90 minutes. Like the Riverside this geyser erupts obliquely. Near it are several other craters



GIANT GEYSER

10099

and the WHITE PYRAMID GEYSER CONE, an old geyser mound. Across the road from the Daisy is BONITA POOL. The other principal nearby features are BRILLIANT POOL and the COMET GEYSER.

PUNCHBOWL SPRING (Mileage 54.2) is on a mound five feet above the general level. This violently boiling hot spring ten feet in diameter has a glittering rim of colored formation about 18 inches high.

BLACK SAND POOL (Mileage 54.4) has a funnel about 40 feet in diameter bordered by a high bank of obsidian sand. From its west side flows a considerable stream of hot water forming a most beautiful channel which presents many colors of algal life.

SPOUTER GEYSER (Mileage 54.7) is a small geyser at the right of the road.

Footbridge (Mileage 54.8). A stop is made here to visit the large and important hot pools on the other side of Iron Creek. The first one is the large SUNSET LAKE at the right which presents various shades of color. Nearby is



CASTLE GEYSER

16062

RAINBOW POOL and a few rods to the south is the famous EMERALD POOL which no one should fail to see. The small boiling crater by the footbridge is CLIFF GEYSER which at times plays several feet high. After returning across the



HAMILTON STORE AT OLD FAITHFUL

26496

footbridge it is only a short walk upstream to GREEN SPRING a large hot lake.

WHISTLE GEYSER (Mileage 54.9) is at the left of the road at this point. This is a most curious phenomenon. It performs only at great intervals but when the great rush of steam commences as it does several times each season a roar is produced which is audible for half a mile and lasts several minutes.



HAYNES PICTURE SHOP, OLD FAITHFUL

23251



OLD FAITHFUL INN

23436

THREE SISTERS SPRINGS (Mileage 55.7) are at the right of the road. These amiable sisters never battle or roar.

Road Junction (Mileage 55.8) turn left to CASTLE GEYSER (Mileage 56.0) which by scientists is declared to be the oldest geyser formation in the park, was named in 1870 by the Washburn-Langford Party on account of its resemblance to the ruins of an old feudal castle. It plays at irregular intervals 75 feet high for a period of half an hour. Adjacent to the Castle Cone is TORTOISE SHELL SPRING and 100 feet north is CRESTED POOL a beautiful blue hot water basin 20 feet in diameter.

From here we return to the road junction (Mileage 56.2) and on to HAMILTON'S STORE at the right, to HAYNES PICTURE SHOP at the left, OLD FAITHFUL INN (Mileage 56.5) and Old Faithful Geyser (Mileage 56.6). South of Old Faithful Geyser is the OLD FAITHFUL PUBLIC AUTOMOBILE CAMP, Ranger Station and the Old Faithful Museum and to the east is OLD FAITHFUL LODGE.

HAMILTON STORES at Old Faithful, two in number, are situated by the main highway before arriving at the Inn



OLD FAITHFUL LODGE

2S128

and in the Public Automobile Camp. At these stores curios and tourists' supplies in profusion are placed on sale.

OLD FAITHFUL INN is the most extensive log structure yet devised by man. It is a triumph in utilizing primitive material in construction. At night a powerful search light from the top of the Inn illuminates one of the eruptions of Old Faithful Geyser. It was originally built in 1904 but since that time has been greatly enlarged by the addition of two spacious wings.

OLD FAITHFUL LODGE with its hundreds of furnished cabins and large main building accommodates thousands of visitors. Evening entertainment here includes special programs and dancing in the large recreation hall.

OLD FAITHFUL MUSEUM which houses a most interesting collection of scientific exhibits was completed in the spring of 1929. It is operated by the National Park Service for the free use of park guests.

GEYSER BATHS, operated by Henry Brothers consist of a large partly enclosed swimming pool of warm geyser water in front of Old Faithful Inn and a complete establishment in the Automobile Camp Ground.



OLD FAITHFUL GEYSER

13040

OLD FAITHFUL RANGER STATION overlooking Old Faithful Geyser is the ranger headquarters in Upper Geyser Basin; the ranger naturalists headquarter at the Museum.

HAYNES PICTURE SHOPS, two in number are situated in front of Old Faithful Inn and at the entrance to the Auto-

mobile Camp. In addition to a complete line of park views, books, photographic supplies, including motion picture films and equipment, this company specializes in overnight photo finishing and has shops in Old Faithful Inn and Old Faithful Lodge for the convenience of park guests.

OLD FAITHFUL GEYSER, the most famous geyser in the world was named in 1870 by the Washburn-Langford Party. It plays 150 feet high for four minutes at intervals varying from 60 to 80 minutes depending on the seasonal water supply. As before mentioned an eruption of this geyser is illuminated every night by a giant searchlight.

PHOTOGRAPHING. Most people make the sad mistake of attempting to photograph Old Faithful Geyser without getting far enough away to get the whole 150 foot eruption. The benches are much too close. Since the prevailing winds are from the west the steam is usually blown toward the Lodge so it is better to photograph Old Faithful from the opposite side. Be sure the sun is not behind you. Use a 2x filter in taking movies in bright sunlight at F8 to F11 and stills with a K1 filter $1/25$ th of a second at F11, or without a filter at F16. In photographing the Lodge and Inn remember that they are very dark colored and require a larger diaphragm opening than light colored buildings. Do not use a filter in photographing Morning Glory Pool or other close-ups, except the yellow buses and geysers taken from a distance. Remember bears are hard to photograph and are usually under-exposed, due to their dark color. By the aid of the ranger naturalists who keep track of the eruptions of the regular geysers you should be able to get photographs of not only Old Faithful Geyser in eruption but also the Riverside and Daisy geysers. Cones and craters that make good studies are Morning Glory Pool, the Grotto Formation, Giant Geyser Cone, Punch Bowl Spring, Emerald Pool, Castle Geyser Cone, Crested Pool, Sponge Geyser and the cones of the Lion Geyser group. Old Faithful cannot be photographed by searchlight even with the fastest lens.

DISTANCES FROM OLD FAITHFUL (OF) to West Yellowstone 31.2; to Mammoth Springs (MS) 52.1; to Moran,



TOURISTS AND GEYSER HILL, OLD FAITHFUL

15078

Wyoming and Grand Teton National Park 66.3; to Cody, Wyoming via Lake 119.8; to Mammoth Springs (MS) via Lake, Canyon and Dunraven Pass 129.4 miles.

HORSEBACK TRIPS FROM OLD FAITHFUL. Seven mile trip to Lone Star Geyser. Eighteen mile round trip via Lone Star Geyser to Shoshone Geyser Basin at Shoshone Lake. Eight mile round trip to Mallard Lake.

THE BEAR FEEDING GROUND at the south edge of the Public Automobile Camp like Old Faithful Geyser is a center of interest. Both black and grizzly bears frequent these grounds nightly when the garbage delicacies are delivered there by the Inn and Lodge; ranger naturalists explain the habits of the bears and other wild animals of the park.

GEYSER HILL across the Firehole River is reached by a footpath. During the day ranger naturalists conduct parties to the interesting geysers and springs here situated. The four foot cone is the crater of the **BEEHIVE GEYSER** which plays 200 feet high for 15 minutes at irregular intervals usually following activity of the **Giantess Geyser** situated further

up on Geyser Hill. Near the river bank is CASCADE GEYSER which has become a quiescent hot spring. At the river's edge is SPUTTERER SPRING which discharges boiling water into the Firehole. On the opposite bank of the river is CHINAMAN SPRING. A chinaman is said to have once put a tent over this natural washtub to start a laundry but when the soap was dissolved in the water the spring erupted with great violence and the chinaman fled. "Soaping of geysers" sometimes produces violent eruptions which destroy the formation so this practice has been prohibited for many years. We next come to the GIANTESS GEYSER which occupies the most prominent position on Geyser Hill. Its eruptions attain the height of 150 to 200 feet, the explosions being so violent that earth tremors so generated may be felt as far as Old Faithful Geyser. The duration of eruptions varies from 12 to 36 hours and occurs at intervals of 10 to 20 days. Turning westward we pass THE TEAKETTLE, THE VAULT, PUMP, TOPAZ SPRING, SPONGE GEYSER, DUBLET POOL, and BEACH SPRING and arrive at the Lion group of four craters. The LION GEYSER plays 60 feet high for two to four minutes several times each day. The LIONESS GEYSER seldom plays but when in action the eruptions attain a height of 100 feet and last 10 minutes. The BIG CUB and the LITTLE CUB have peculiar habits. The big one plays at the same time as the Giantess and to a height of 60 feet while the little one plays every one to two hours but only three to ten feet in height.

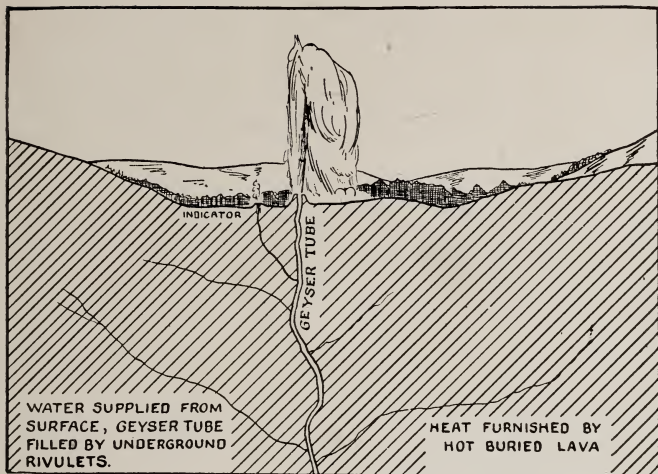
The Castle Geyser which you have already seen stands out prominently in the west. We shall now visit a group of interesting geysers on the same side of the Firehole River as we are now standing and down-stream about 500 yards. Before reaching the footbridge which leads to the Castle Cone we come to LIBERTY POOL and near the footbridge is CHIMNEY CONE; without crossing the bridge we come next to the SAWMILL GEYSER which plays 35 feet high at frequent intervals. Small geyser eggs will be observed in the small pools around the main crater. A short distance to the right is the SPASMODIC GEYSER which plays only four feet high but for long periods varying from 20 minutes to an hour.



OBLONG GEYSER CRATER

10100

The BULGER SPRING is seen just before we arrive at the GRAND GEYSER, one of the most important geysers in the entire region. It plays in a series of eruptions each attaining a height of 200 feet and lasting from 15 to 30 minutes; displays occur about twice in 24 hours. The Grand Geyser plays from a low crater just south of the crater of the TURBAN GEYSER which also plays at the same time as the Grand but to a height of only 40 feet. Its eruptions sometimes last three hours. Continuing in the general direction of the Giant Geyser Cone we next pass the WAVE SPRING appropriately named for the gentle pulsations which disturb the surface of the pool. Next we come to BEAUTY POOL and the aptly named CHROMATIC POOL which is one of the most beautiful in the Upper Basin. On the opposite bank of the Firehole River just across the footbridge is INKWELL SPRING and a few feet to the right the beautiful crater of the OBLONG GEYSER, which plays every eight to fifteen hours to a height



GEOLOGICAL PROFILE, TYPICAL GEYSER

13029

of 20 to 40 feet, eruptions lasting seven minutes. We have now visited all of the most important hot springs and geysers in the Old Faithful region which is proclaimed by world travelers to be the greatest area of its kind anywhere to be found. Remember that while you are here you should see not only Old Faithful Geyser but the Lion, the Grand, the Riverside, and the Daisy and if you are very lucky you may see the Castle or the Giant or Giantess.

MECHANICS OF A GEYSER. A geyser may be defined as a periodically erupting hot spring, its water is not volcanic but simply hot meteoric rain and snow water; so a geyser is not a volcano ejecting water, but a true spring. Were the heat sufficient, and the tube long enough all hot springs would erupt.

Sounds like cannonading are heard directly preceding a geyser eruption; this is caused by the collapse of steam bubbles from the hot region below rising through the cooler strata of water. The surface of the pool, from which the geyser

plays, bulges and overflows, and sometimes jets of water are thrown upward preceding activity.

The famous scientist, R. W. Bunsen, after making a careful study of geyser action by extensive observation advanced the following authoritative explanation:

Pressure in water (being due to gravity) increases with the depth, and furthermore, the boiling point rises with the increase in pressure. The geyser tube which extends deep into the earth fills with water from the higher tracts; the heat is from the buried masses of hot lava.

The typical geyser eruption is divided into five stages, (1) the water remains practically stationary after the tube has filled, and becomes steadily hotter, (2) steam bubbles rising through the cooler strata of water, collapse, producing the characteristic premonitory "cannonading," (3) steam forms below in sufficient quantity to cause the surface to overflow, thus the pressure is lessened in all parts of the tube, and (4) the great burst of steam issuing, ejects the water from the tube, (5) the steam follows and while the tube is filling for another eruption, there is no activity other than occasional puffs of steam.

(Re-set speedometer at Old Faithful Geyser Cone at 54.9). Leaving Upper Geyser Basin the road crosses the Firehole River, (Mileage 55.5) and leads to the platform at Kepler Cascade (Mileage 56.6) which is nearly 150 feet high, one of the most attractive water falls in the region.

Road Junction (Mileage 58.2). Right side road leads to Lone Star Geyser (Mileage 59.0). It erupts every three hours to a height of 50 feet, duration 10 minutes. Returning to the main road (Re-set speedometer to Mileage 58.2).

Turn right on main highway across bridge over the Firehole River.

NORRIS PASS (Mileage 62.8) is at the right of the road. This was named for former Superintendent P. W. Norris.

ISA LAKE (Mileage 63.5) is on the top of the first crossing of the Continental Divide at an elevation of 8,261 feet. Its water flows into both the Pacific and Atlantic Oceans. CRAIG PASS is at this point.

CORKSCREW HILL (Mileage 63.7) is descended by a very crooked road to—

DELACY CREEK (Mileage 64.7) from which the second ascent is made to—

SHOSHONE POINT (Mileage 65.3). From here Shoshone Lake is seen at the south and in the distance the peaks of the Teton range, the highest of which, the Grand Teton is 13,747 feet.

THE CONTINENTAL DIVIDE (Mileage 70.1) is crossed the second time at an altitude of 8,364 feet.

LAKE VIEW (Mileage 72.8) affords the first glimpse of Yellowstone Lake which is 26 miles long and is the largest lake in North America at its elevation, 7,730 feet. Recent soundings disclose a maximum depth of 330 feet. Beyond the lake are seen the ABSAROKA MOUNTAINS which on account of their precipitous sides are practically impassable.

WEST THUMB OF YELLOWSTONE LAKE (Mileage 73.8). Here are situated a large PUBLIC AUTOMOBILE CAMP, CAFETERIA, HAMILTON STORE and the RANGER STATION.

Nearby is a large paintpot, the FISHING CONE, LAKE SHORE GEYSER and several other interesting features.

WEST THUMB JUNCTION (Mileage 73.8). The highway to the right goes to the southern boundary, 16.9 miles distance, and to Moran, Wyoming, 25.5 miles south of the south boundary. Moran is opposite the Grand Teton National Park. Left highway skirts the shore of the lake to Yellowstone Lake outlet, where the road from Cody, Wyoming, joins the Grand Loop Road, and to the Grand Canyon.

(For continuation of the tour to the Lake and Canyon turn to the middle of page 68.)

Tour From the Southern Entrance

(Via Moran, Wyoming)

Important mileages from LANDER, WYOMING, on the Chicago & North Western Railroad follow:

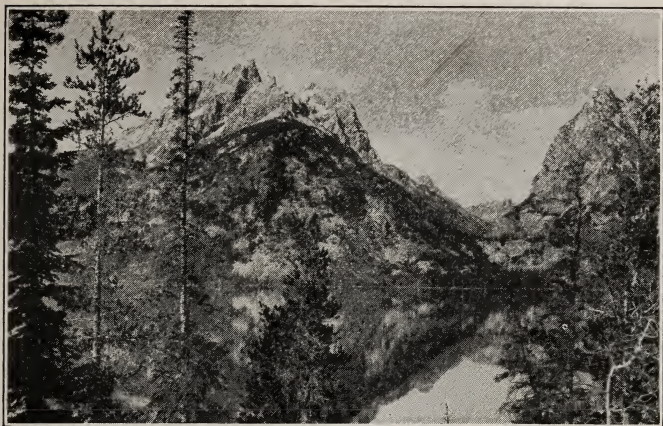
LANDER (Mileage 0.0); FORT WASHAKIE (Mileage 17.1); DUBOIS (Mileage 83.5); BROOKS LAKE, TOGWOTEE INN (Mileage 108.5); TOGWOTEE PASS, CONTINENTAL DIVIDE (Mileage 116.5); Road Junction (Mileage 152.9) left road to MORAN, WYOMING (Mileage 153.8); right road to JACKSON LAKE LODGE, (Mileage 153.5); SOUTHERN ENTRANCE (Mileage 178.4) Symbol (SE).

DISTANCES FROM SOUTHERN ENTRANCE (SE) to points outside of the park: Denver, Colorado 618; Salt Lake City, Utah 408; Los Angeles, California 1147; New York City via Eastern Entrance, A. Y. P. and Lincoln Highway 2512; Moran, Wyoming and Grand Teton National Park 25.2 miles.

—to points within the park: West Thumb (WT) 23.6; Lake Junction (LJ) 44.0; Cody, Wyoming 126.2; Canyon Junction (CJ) 58.3; Tower Junction (TJ) via Dunraven Pass 83.1; Mammoth Springs (MS) 100.7; Western En-



THE GRAND TETON, 13,747 FEET



GRAND TETON FROM JENNY LAKE

28473

trance (WE) via Canyon and Mammoth 148.6; park round trip from Southern Entrance (SE) 193.6 miles.

PARK MILE-POST MARKINGS. The principal symbols are SE (Southern Entrance), WT (West Thumb of Yellowstone Lake), LJ (Lake Junction), CJ (Canyon Junction), TJ (Tower Falls Junction), MS (Mammoth Hot Springs), NJ (Norris Junction), MJ (Madison Junction) and OF (Old Faithful).

GRAND TETON NATIONAL PARK about 50 miles south of the West Thumb was established by Act of Congress signed by President Calvin Coolidge on February 26, 1929. It embraces the Teton Mountain Range including the GRAND TETON, elevation 13,747 feet, MT. OWEN, 12,910 feet, MIDDLE TETON, 12,700 feet, SOUTH TETON, 12,500 feet, MT. TEEWINAT, 12,100 feet, MT. MORAN, 12,100 feet, MT. WOODRING, 11,500 feet, MT. ST. JOHN, 11,400 feet, and several other peaks; also JENNY LAKE, LEIGH LAKE, STRING LAKE and most of PHELPS LAKE at the south. It has an area of about 150 square miles.

FISH AND FISHING. In the Snake River and the other streams and lakes in the vicinity of the Southern Entrance of the park are the following varieties: Redthroat (Cutthroat, Blackspotted, Native) Trout, Scotch Lake (Loch Leven) Trout, European Brown (Brown, Von Behr) Trout, Eastern Brook (Speckled) Trout, Rainbow and Steelhead Trout, Rocky Mountain Whitefish and Land Locked Salmon. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Wyoming one must have a license. Tackle may be procured at the stores in the neighboring towns, at the Dude Ranches, at Moran, Jackson Lake Lodge and at the stores in the park.

LEWIS FALLS (Mileage 188.8) and **LEWIS LAKE** (Mileage 190.0) were named for Captain Lewis of the Lewis and Clark Expedition. The **CONTINENTAL DIVIDE** (Mileage 197.6) is crossed on the way to West Thumb (Mileage 202.0).

(Re-set speedometer at West Thumb to 73.8).

PHOTOGRAPHING. Thermal phenomena here that are good subjects for the photographer are the Paintpot which requires bright sunlight; take stills at $1/25$ th of a second without filter at F16, and movies without filter at F16; take stills of the Fishing Cone at $1/25$ th of a second with filter at F16 or without at F32 and movies with filter at F11 or without filter at F16 in bright sunlight. If you are fortunate you may see the Lakeshore Geyser.

YELLOWSTONE LAKE (Mileage 73.8) has a shore line of 100 miles, an area of 139 square miles, and is 26 miles across. Its elevation is 7,730 feet. Along the shores of this beautiful lake abound the native or Cutthroat trout. No fishing license is required in the park. All fish hooked less than 7 inches long shall be carefully handled with moist hands and returned at once to the water if not seriously injured. Five fish per person fishing constitute the limit for a day's catch, at Lake and Fishing Bridge.

From the West Thumb the highway leads to the outlet of Yellowstone Lake. The new highway along the lake shore was completed in 1926. By the roadside are frequently seen large tree trunks from which patches or encircling



COLTER PEAK AND YELLOWSTONE LAKE

bands have been removed. This is the harmful work of PORCUPINES which are so abundant in the park and destroy so many trees that it may become necessary to have a lot of them killed. It is known that the Porcupine has caused the death of more than one mountain lion and lynx by means of its quills; any animal attempting to bite the porcupine gets its mouth filled with spines, which prevent its eating, causing death by starvation. It has been stated that the quills are thrown by the porcupines; this, however, is not the fact. When attacked he huddles into a ball completely covered with quills and strikes his adversary with his tail, at the same time lodging in him many painful spines.

Of the small furred animals in the park, there are otter, mink, weasel, marten, skunk, badger and wolverine. The OTTER, being fond of water and living chiefly on fish, makes its home usually under the roots of a large tree overhanging the banks of a stream. It has webbed feet and a thick, flat tail for use in swimming. The fur of the otter is very fine and of a dark brown color. The MINK haunts the margins of streams and rivers and is less aquatic than the



LAKE HOTEL DINING ROOM

otter. It preys on small animals and fish when it can procure them, but lives chiefly on birds; it is smaller than the otter, and its fur is yellowish or dark brown. The COMMON WEASEL, or ERMINE, is a small, long-bodied animal with short legs, the smallest member of the marten family. It kills grouse, ducks, rabbits and other animals, some ten times its own size, and is considered the most vicious of all animals. In summer its coat is brown, but white in winter, a striking manifestation of Nature's plan of protection. The MARTEN lives on small rodents, birds and eggs, and spends so much time in the trees that it is often called the PINE MARTEN. Its habitat is on rugged and rocky forest-covered mountains, seldom in open country. The WOLVERINE is a heavily built carnivorous animal like a diminutive bear in appearance, but with a short distinct tail. It is one of the rarest animals in the Park, but quite a number are trapped annually beyond the Park boundaries. The BADGER has a broad, flat back, and like the weasel, has very short legs and is very savage. It may, when at a distance, be distinguished from the woodchuck by its black and white striped

face. It lives in burrows and feeds on squirrels and other rodents of every description.

PUMICE POINT (Mileage 81.7). DOT ISLAND is to the east, and FRANK ISLAND in the distance.

FISH HATCHERY (Mileage 92.1). This is maintained by the United States Bureau of Fisheries of the Department of Commerce, and is the largest game fish hatchery in the world. Visitors are taken through here daily.

LAKE HOTEL (Mileage 92.5), of Colonial architecture is one of the system of four hotels operated by the Yellowstone Park Hotel Company. Speedboats and fishing boats and equipment are available at the dock of the YELLOWSTONE PARK BOAT COMPANY in front of the Lake Hotel.

BEAR FEEDING GROUND, where both black and grizzly bears are seen, is reached by foot-path leading back of the Hotel. Noblest among our wild animals is the GRIZZLY BEAR, known also as the SILVERTIP. Misunderstood for many years, his aggressiveness greatly overrated, we now know him as a marvelously sagacious wild thing, crafty in hiding, loving concealment. Reports of his attacking man unprovoked are



HAMILTON LAKE STORE



GRIZZLY BEARS

27367

usually very difficult of proof. His great strength and agility make him the most formidable of antagonists when aroused. He is not a tree-climbing bear, but uses his long claws for digging out small animals and roots. He is omnivorous, but the Grizzly of the Yellowstone region has a marked tendency to relish meat in preference to other food, because of the abundance of game in this district. As an actual killer of large game and of cattle he rarely plays an active part. The Grizzly will not often be met by the tourist except about a few of the feeding grounds at twilight. There he is not afraid of the scent of man.

THE HAMILTON STORE and U. S. POSTAL STATION (Mileage 92.9) which overlooks Yellowstone Lake was completed in 1922. A full assortment of curios and tourist supplies are available here. Nearby is the gas station.

LAKE RANGER STATION (Mileage 93.0) is the headquarters for the rangers and ranger-naturalists stationed at this point.

LAKE PUBLIC AUTOMOBILE CAMP (Mileage 93.0) is in the woods back of the ranger station and store. It is one of

the smaller camps, the larger one being at FISHING BRIDGE (Mileage 94.6).

LAKE LODGE (Mileage 93.1) overlooks the Yellowstone River and the lake outlet and in the distant Absaroka Mountains is seen the SLEEPING GIANT. From the Lodge and its small city of cabins a trail leads to the BEAR FEEDING GROUND. Some of the BLACK BEARS fear man so little that they feed from his hand. Molesting or teasing the bears is prohibited. These bears are powerful and timid wild animals, and exceedingly nervous, and any unusual movement alarms them and they may strike or bite. They resent any form of teasing such as withholding food. It is unfair to the bears to feed them by hand, for bears that bite many tourists must be shot and no one is to blame but the tourists. Do not allow children to go near the bears.

PHOTOGRAPHING. Pictures of Lake Hotel and the Lake and mountains as well as fishing scenes on the lake and vistas taken from the speedboats are usually over-exposed. To correct this either use a filter or shorten the exposure in taking both movies and stills. Pictures of Lake Lodge on the other hand are usually under-exposed. The best pictures of the Sleeping Giant are taken with a telephoto lens and ray filter. Remember that bears are very dark colored and pictures of them are usually under-exposed.

LAKE JUNCTION (Mileage 94.2) (Symbol LJ) is the junction of the road entering from the right from Cody, Wyoming, 82.2 miles distant, with the Grand Loop Road. Turn right to—

FISHING BRIDGE (Mileage 94.4) over the Yellowstone River is the favorite fishing place for hundreds of anglers, most of whom are amply rewarded for their efforts.

FISH AND FISHING. Redthroat (Cutthroat, Blackspotted, Native) Trout inhabit the waters of Yellowstone Lake and the Yellowstone River between the lake and Grand Canyon, there being practically no other variety in the vicinity.



FISHING BRIDGE

28372

DISTANCES FROM LAKE JUNCTION (LJ) to East Entrance (EE) 27.0; to Cody, Wyoming 82.2; to Moran, Wyoming and Grand Teton National Park via West Thumb (WT) 69.5; Canyon Junction (CJ) 14.3; Tower Junction (TJ) via Dunraven Pass 39.1; Mammoth Springs (MS) via Canyon and Tower Junction (TJ) 56.7 miles.

FISHING BRIDGE PUBLIC AUTOMOBILE CAMP (Mileage 94.2) at which are the following services operated by the various park companies: HOUSEKEEPING CABINS, HAYNES PICTURE SHOP which carries a full line of park views, books, photographic supplies and specializes in overnight photo finishing, CAFETERIA, FUEL YARD where bundles of split wood of convenient size are available, GARAGE, GAS STATION and HAMILTON STORE which carries a full line of curios and tourist supplies. This is the second largest automobile camp in the park, the one at Old Faithful being the largest, and is a desirable place to spend many days, boating, fishing, and hiking. (See map on page 80.)

(For continuation of trip to Grand Canyon turn to the middle of page 81.)

Tour From The Eastern Entrance

Via Cody, Wyoming

CODY, WYOMING (Mileage 0.0) was named for Colonel William F. Cody affectionately known as Buffalo Bill. Recently a splendid statue of Buffalo Bill has been erected here. Set speedometer at 0.5 at Shoshone River Bridge. Cody is the terminus of the Burlington Route which company operates the Burlington Cody Inn here for the convenience of its patrons. Cody is 55.2 miles east of the Eastern Entrance of the park. Buses of the Yellowstone Park Transportation Company operate daily to and from the park in connection with the railroad.

SHOSHONE DAM (Mileage 7.6) is a tremendous structure 200 feet wide and 328 feet in height. At the top it is 10 feet thick and its base though only 80 feet long is 108 feet in thickness. It impounds the waters of the Shoshone River for the benefit of farm land over a vast area.

MORRIS RANCH (Mileage 18.4) at the left of the highway is a typical western dude ranch operated by Frederick Morris a typical genial westerner.

SHOSHONE NATIONAL FOREST (Mileage 26.7) is entered at this point.

At OVERHANGING ROCK CLIFF (Mileage 28.5) is a striking piece of engineering work where the highway is carved out of the cliff above the river.

GOOSE (Mileage 29.0) is seen in cliff at right.

HOLY CITY (Mileage 29.2) with its many spires surmounting the cliff is seen at the right while at the left are the WOODEN SHOE and PTARMIGAN MOUNTAIN.

THORS ANVIL (Mileage 29.8) and the THOUSAND FOOT CLIFF (Mileage 30.6) are next passed.

THE PALISADES (Mileage 41.1) and the ELEPHANT HEAD at right (Mileage 42.6), and the MUTILATED HAND are seen in the right distance.

CHIMNEY ROCK (Mileage 43.2) is passed shortly before HOLM LODGE (Mileage 45.8) is reached.



SHOSHONE CANYON AND TUNNEL

PAHASKA TEPEE LODGE (Mileage 52.9) was originally a hunting lodge owned by Colonel Cody. Its patrons now for meals and lodgings are principally motorists who have replaced the picturesque hunters of early days. Manager Wilkinson also operates a garage and gas station.



HOLY CITY



EASTERN ENTRANCE GATEWAY



SYLVAN PASS LODGE

EASTERN ENTRANCE (Mileage 55.2), is 27 miles from the Grand Loop Road at Lake Junction. Here is situated the Government checking station where rangers record all automobiles and motorcycles entering the park, collect the entrance fees prescribed by Congress, and issue season permits. Nearby is SYLVAN PASS LODGE, built in 1924 principally as a lunch station for guests entering and leaving the Park. It is operated by Yellowstone Park Lodge and Camps Company jointly with the Yellowstone Park Hotel Company.

DISTANCES FROM EASTERN ENTRANCE (EE) to points outside of the park: Cody, Wyoming 55.2; Cheyenne, Wyoming 543; Denver, Colorado 651; New York City 2445; Los Angeles, California via Western Entrance 1199 miles.

—to points within the park: Lake Junction (LJ) 27.0; Moran, Wyoming (Grand Teton National Park) via West Thumb (WT) 96.5; Canyon Junction (CJ) 41.3; Tower Junction (TJ) via Dunraven Pass 66.1; Mammoth Springs (MS) 83.7; Norris Junction (NJ) 104; Madison Junction (MJ) 118.1; Western Entrance (WE) 131.6; Old Faithful (OF) 135.8; West Thumb (WT) via Mammoth Springs 153.0; park round trip from Eastern Entrance (EE) 200.4.



FISHING BRIDGE PUBLIC AUTOMOBILE CAMP

23397

PARK MILE-POST MARKINGS. The principal symbols are EE (Eastern Entrance), LJ (Lake Junction), CJ (Canyon Junction), TJ (Tower Falls Junction), MS (Mammoth Hot Springs), NJ (Norris Junction), MJ (Madison Junction), OF (Old Faithful) and WT (West Thumb of Yellowstone Lake).

FISH AND FISHING. In the Shoshone River and other waters in the vicinity of the Eastern Entrance to the park are the following varieties: Redthroat (Cutthroat, Black-spotted, Native) Trout, Lake (Mackinaw) Trout, Eastern Brook (Speckled) Trout, Rainbow Trout, Rocky Mountain Whitefish, Bass, Crappies and Suckers. One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Wyoming one must have a license. Fishing tackle may be procured at the stores in Cody, at the Dude Ranches and at Pahaska Tepee Lodge, and at the stores in the park.

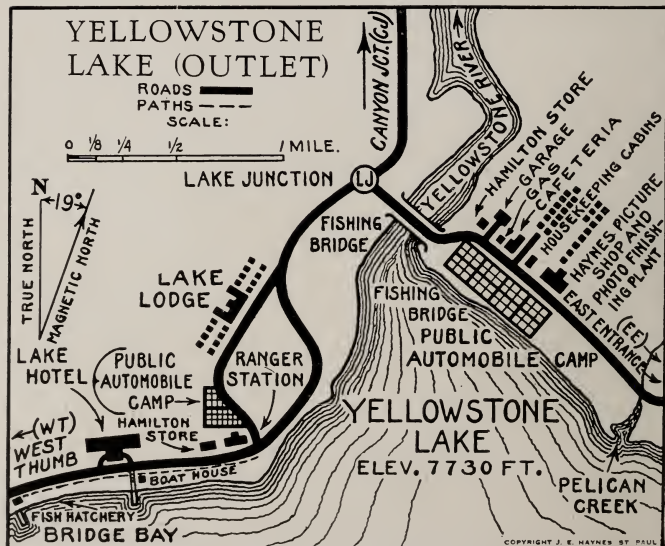
SYLVAN PASS (Mileage 62.9) is crossed at an elevation of 8,559 feet. LAKE ELEANORE (Mileage 63.6) and SYLVAN LAKE (Mileage 65.2) are the next features of interest. South-east of Sylvan Lake is seen TOP NOTCH PEAK which rises to an elevation of 10,000 feet.

TETON POINT (Mileage 71.3) affords a splendid view of the distant Teton Mountains on days when the visibility is good, and the broad expanse of Yellowstone Lake in the foreground.

TURBID LAKE (Mileage 75.6) with its sulphur water and sulphurous odor is evidence that we are approaching the thermal regions.

OSPREY NEST (Mileage 76.3) is at the right of the road on a stump top where visitors may see each spring the curious heads of the young peering over the side of the nest.

FISHING BRIDGE PUBLIC AUTOMOBILE CAMP (Mileage 81.8) at which are the following services operated by the



various park companies: HOUSEKEEPING CABINS, HAYNES PICTURE SHOP which carries a full line of park views, books, photographic supplies and specializes in overnight photo finishing, CAFETERIA, FUEL YARD where bundles of split wood of convenient size are available, GARAGE, GAS STATION and HAMILTON STORE which carries a full line of curios and tourist supplies. This is the second largest automobile camp in the park, the one at Old Faithful being the largest, and is a desirable place to spend many days, boating, fishing, and hiking.

FISHING BRIDGE (Mileage 82.0) over the Yellowstone river is the favorite fishing place for hundreds of anglers, most of whom are amply rewarded for their efforts. The fish caught here are the native trout also known as Cutthroat and Redthroat trout.

LAKE JUNCTION (Mileage 82.2) (At this point change speedometer to 94.2, and turn right to Grand Canyon.)

MUD VOLCANO (Mileage 0.2, the speedometer having turned at 100 miles) is a large cauldron on the mountain side with a funnel shaped crater 30 feet deep which is partly



DRAGONS MOUTH SPRING

filled with a lead colored mass of mud in violent agitation. Nearby is the DRAGONS MOUTH SPRING a green stone gable over a violently pulsating hot spring. The other springs in this geyser basin are muddy or cloudy but the waters of the Dragons Mouth are remarkably clear.

PHOTOGRAPHING. The Mud Volcano may be photographed from the road in bright sunlight making stills without filter at $1/25$ th of a second at F16 and movies without filter at F16. Closeups of the crater and of the Dragons Mouth Spring nearby are made as follows, with good sunlight, stills $1/25$ th of a second at F11 and movies at F11, using no filter in either case. Remember that the filters are particularly advantageous in photographing geysers and steam columns against the sky, in making distant vistas of mountains and in photographing the yellow buses.

HAYDEN VALLEY (Mileage 0.6), named in honor of Dr. F. V. Hayden who was in charge of the geological surveys of the park, is the favorite range at certain seasons, of the elk.

NORTHERN PACIFIC RAILWAY MONAD TRADEMARK (Mileage 2.0) is outlined in the meandering of Trout Creek.



GRAND CANYON LODGE



GRAND CANYON FROM ARTIST POINT

28328

This ancient Chinese symbol was adopted as the symbol of the first railway to be built to the park boundary.

CHITTENDEN BRIDGE (Mileage 7.8) which replaced Uncle Tom's ferry across the Yellowstone River is the longest Melan arch bridge in the world. The highway crossing this bridge leads to the GRAND CANYON LODGE (Mileage 8.4), near which is UNCLE TOMS TRAIL to the bottom of the Grand Canyon, and to Artist Point. The GRAND CANYON LODGE (Mileage 8.4) is one of the largest lodge cities in the park. From here many hikes and horseback rides afford diversity for guests. Trails lead to the foot of the Upper Falls and the Great Falls and to the brink of the Great Falls. Another trail leads along the rim of the Canyon to Artist Point and to Point Sublime. Another trail leads to BEAR FEEDING GROUND, where black and grizzly bears may be seen.

The AMERICAN BLACK BEAR exists in Yellowstone Park in a number of color phases. The commonest type is black with a brown nose and the animal usually sports a white chest patch. Then there are dark brown and medium brown, reddish brown and dull buffy brown individuals. These dull

buffy animals are known as "cinnamon" bears. The Black Bear has low shoulders and in the latter end of summer he shows a great tendency to roly-poly fatness. He is a daylight patron of the feeding grounds where he remains for a short time eating rather daintily and then silently departs. His claws are short and he climbs trees like a cat and then lolls about in the branches like a lazy boy. The trees seem to be his only summer home. His manners are fascinating, but he often shows himself a very scrappy quarrelsome animal.

ARTIST POINT (Mileage 9.4) affords perhaps the most impressive view of the Grand Canyon of the Yellowstone. From the platform one sees the 308 foot Great Falls, Uncle Toms Trail winding downward from the canyon rim 1200 feet to the foot of the fall, ospreys' nests on rock spires, and across the canyon some wild animal trails and the platforms at Point Lookout, Grand View, and Inspiration Point. This gorge is cut through igneous rock which has weathered and crumbled and has taken on many beautiful colorings. The yellows which predominate are responsible for the name of the park. POINT SUBLIME, three-quarters of a mile beyond Artist Point is reached by a foot trail.

HORSEBACK TRIPS FROM CANYON LODGE. Ten mile round trip to Sulphur Mountain. Four mile round trip to Artist Point and Point Sublime.

PHOTOGRAPHING. In photographing the falls remember that in good sunlight the water is very white and most photographers use too large a diaphragm opening in photographing them close-up. The distant views of the canyon in the morning in bright sunlight may be taken with a filter (2x or K1) stopping the movie camera diaphragm down to F11 or without a filter at F16, while stills are made at 1/25th of a second with a K1 filter, at F11 or without a filter at F16. More exposure should be given in taking views of the canyon in the afternoon on account of the deep shadows. Remember bears taken close-up are so dark that no filter should be used and movies should be taken at F5.6 to F8 and stills at 1/25th of a second (without filter) and at about F8, as a



UPPER FALL OF THE YELLOWSTONE, 109 FEET

14053

general rule, except at twilight when a much larger diaphragm opening is necessary.

Returning from Artist Point we drive again past the Lodge to the Chittenden Bridge (Re-set speedometer to 7.8) and turn right. The next stop is at the platform at the Upper Falls (Mileage 8.2). Cars are parked a few rods further on at Haynes Picture Shop.

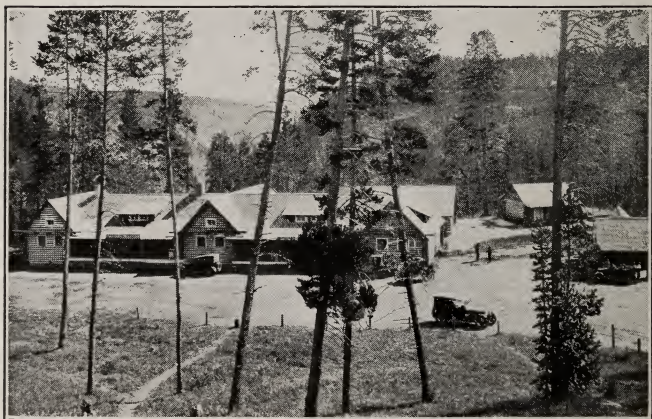
The UPPER FALLS (Mileage 8.2) has a perpendicular drop of 109 feet. The water strikes the shelving rock near the bottom of the abyss and shoots out rocket-like. Above the falls from the platform an excellent view of the rapids is had.

HAYNES PICTURE SHOP (Mileage 8.3) at the right of the road near the parking space carries a full line of park views, photographic supplies, books, and specializes in overnight photo finishing. From here the trail leads to CRYSTAL FALLS.



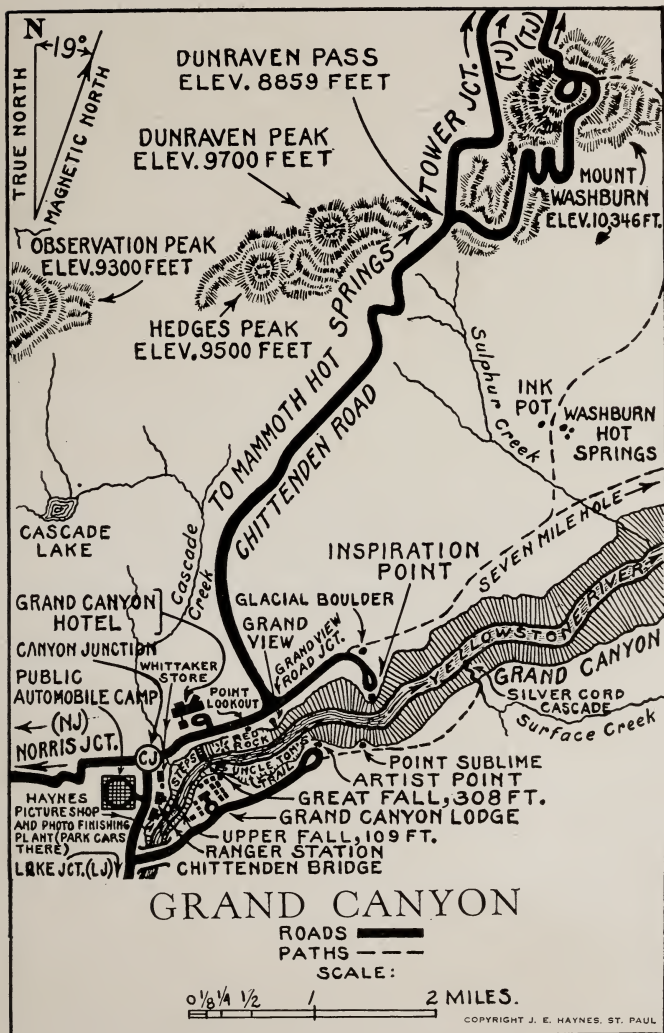
HAYNES PICTURE SHOP, GRAND CANYON

24067



WHITTAKER STORE, GRAND CANYON

25028





GRAND CANYON HOTEL LOUNGE

13073

CANYON RANGER STATION (Mileage 8.3) at the right is the community center and ranger headquarters for this district.

PUBLIC AUTOMOBILE CAMP (Mileage 8.3) is reached by a side road to the left. Here is operated a large CAFETERIA, a group of HOUSEKEEPING CABINS and a FUEL YARD where split wood in bundles of convenient size is available.

WHITTAKERS STORE, GAS STATION, and U. S. POSTAL STATION (Mileage 8.4) are at the right of the road. Here may be purchased tourist supplies and curios.

CANYON JUNCTION (Mileage 8.5) (Symbol CJ). Be sure to take the right hand road to Canyon Hotel, Point Lookout, Grand View, Inspiration Point, Dunraven Pass, Mt. Washburn, Tower Falls, Roosevelt Lodge, and Mammoth Hot Springs. (The left hand road is a service road to Norris Geyser Basin, which basin should be visited after leaving Mammoth Hot Springs.)

DISTANCES FROM CANYON JUNCTION (CJ) to Dunraven Pass 9.8; to summit of Mount Washburn 13.4; to



J. E. HAYNES

THE MADONNA OF THE WILDS

16343

Tower Junction (TJ) via Mount Washburn 27.4; via Dunraven Pass 24.8; Mammoth Springs (MS) via Dunraven Pass 42.4; Norris Junction (NJ) via cutoff road 11.0 miles.

CASCADE CREEK BRIDGE (Mileage 8.6). A foot path leads from here to Crystal Falls 200 yards distant, downstream from the far end of the bridge.



GREAT FALL OF THE YELLOWSTONE, 308 FEET

16260

SIDE ROAD (Mileage 8.9) leads to the BEAR FEEDING GROUND about three-quarters of a mile away where black and grizzly bears are seen. It is also reached by a ten minute walk from the lobby of the Canyon Hotel. The grizzly should be distinguished from the black bear by his shape. His shoulders are high, surmounted by a mane or hump of long hair. His limbs are long and frame lanky.

BRINK OF GREAT FALLS (Mileage 9.0) is reached by 494 steps built down the slope of the upper canyon at this point.

Turn left to GRAND CANYON HOTEL (Mileage 9.3). (Upon returning to the highway along the rim of the canyon re-set speedometer at this road junction at 9.0). Grand Canyon Hotel was first opened to the public in 1911 but since that time has been greatly enlarged to accommodate a vastly increased patronage.

HORSEBACK TRIPS FROM CANYON HOTEL. Fourteen mile round trip to Seven Mile Fishing Hole. Twelve mile

round trip to Grebe Lake. Eight mile round trip to Cascade Lake.

THE GRAND CANYON OF THE YELLOWSTONE defies description. It is famous for its gorgeous colorings, beautiful architecture, its waterfalls and the winding Yellowstone River that serpent-like threads its way through the tortuous, un-navigable course between its walls which are more than a thousand feet high. The canyon is viewed from many places along its rim and from the brinks of the falls; and quite a few climbers go down Uncle Toms Trail to the bottom of the gorge.

POINT LOOKOUT AND RED ROCK (Mileage 9.5). From here a path leads to Point Lookout and a trail part way down the Canyon side to Red Rock from which a splendid view of the Great Falls is had.

GRAND VIEW (Mileage 9.8). From the platform one gets an excellent view of the gorge.

GRAND VIEW JUNCTION (Mileage 9.9). Continue along the canyon rim about a mile further to Inspiration Point then return to this junction and turn north to continue the park tour.

GLACIAL BOULDER (Mileage 10.6). Scientists tell us that this huge granite boulder was transported from a point several miles north by a glacier. Throughout the whole northern portion of the park are many evidences of glacial action, three invasions of the region having been made. Just before reaching the Glacial Boulder a trail leads off to the left to the famous SEVEN-MILE HOLE, a favorite fishing rendezvous in the Yellowstone River in the bottom of the Canyon. Except on horseback this is a very hard trip. Horses may be obtained at the hotel.

INSPIRATION POINT (Mileage 11.0). A stop should be made here before returning to the Grand View Junction. Out on the platform one sees the Great Falls at the head of the Canyon; on the opposite rim is the platform at Artist Point; on several pinnacles below the spectator may be seen ospreys' nests which early each season are inhabited by the young of this species. We return now to Grand View Junction (Mile-



THE LOOKOUT ON MT. WASHBURN

23475

age 12.1) and turn right on the Grand Loop Road to Dunraven Pass, Mount Washburn, Tower Falls, Roosevelt Lodge and Mammoth Hot Springs.

DUNRAVEN PEAK (Mileage 17.2) has an elevation of 9,700 feet. It was named in honor of the Earl of Dunraven, one of the early park visitors who wrote an interesting book about the region.

DUNRAVEN PASS (Mileage 18.3) has an elevation of 8,859 feet. In bad weather take the left hand road which is the low road. The right hand road leads to the summit of the famous park promontory, MOUNT WASHBURN (Mileage 21.9) which is 10,317 feet above sea level. This is the highest point attained by any of the park highways. This road leads up the south side of the peak and descends the north side joining the low road at the mileage of 24.8. On the summit of Mount Washburn is THE LOOKOUT a stone ranger station erected by the National Park Service for the free use of park guests. From the summit of this mountain when visibility is good one may see the Grand Canyon, Hayden Valley, Yellowstone Lake, and the distant Teton Mountains all to the southward; in the west are Cook Peak and Electric Peak.



TWILIGHT, MT. WASHBURN

In descending the mountain motorists should remember to leave the motor always in gear, in either second or low gear, so that the brakes will not be needed to hold back the car. Many motorists in the past have burned their brake linings by not doing this. The descent from the summit of Mount Washburn is not accomplished until Tower Falls is reached, a distance of 8.6 miles.

(Motorists who do not go over the summit of Mount Washburn should set their speedometers at the mileage of 24.8 at the road junction where the summit road reenters. This point is 3.9 miles beyond the road junction at Dunraven Pass).

BIGHORN SHEEP or MOUNTAIN SHEEP, are found where the scenery is grandest in high mountain places where none but bold and reckless climbers would dare to go. Its young are reared in the highest and most inaccessible places, and as a



TOWER FALLS, TOWER CREEK, 132 FEET

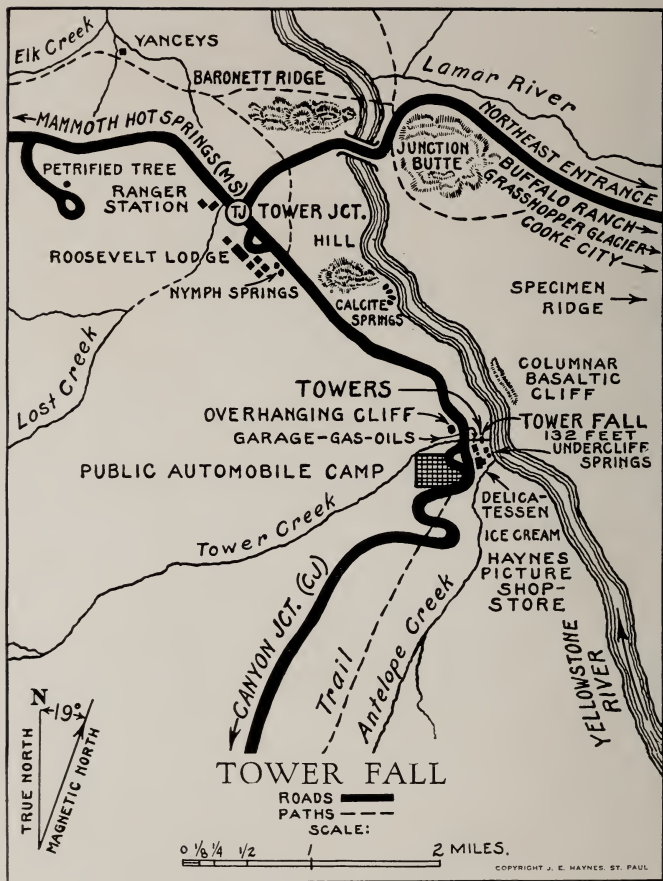


HAYNES DELICATESSEN, SODA FOUNTAIN, PICTURE SHOP, AND GENERAL STORE
AT TOWER FALLS

result, the larger birds are their only dangerous enemy. Bands of Mountain Sheep frequent the high bluffs and slopes of Mt. Washburn at the northern part of the park. They are also found in a few widely separated localities in the Rocky Mountains from British Columbia to Mexico. No other wild animal has spiral close-whorled horns; those of the Mountain Sheep make nearly a complete circle and are circular in cross section and very heavy.

PHOTOGRAPHING. On Mount Washburn close-ups of your party are taken the same as at other places in the park but the distant mountains even on the clearest day require a ray filter or a short exposure as otherwise such views would be greatly over-exposed.

TOWER FALLS PUBLIC AUTOMOBILE CAMP (Mileage 30.5) has the following utilities of the park operators for the service of guests, housekeeping cabins, Haynes Picture Shop, Ice Cream Parlor and Delicatessen where meals are served and where films, post cards, pictures and tourists' supplies may be purchased. It also houses the U. S. Postal Station. Nearby is a gas and oil station and an automobile repair shop operated by the Yellowstone Park Transportation Co. A large parking area is provided where the cars are left while the hike to Tower Falls is made. Fishing at the mouth of Tower Creek



where it enters the Yellowstone River attracts those sportsmen whose pleasure is catching the larger and gamier trout. The principal fish taken at this point are the native (cut-throat) trout.



YELLOWSTONE CANYON NEAR TOWER FALLS

TOWER FALLS of Tower Creek, reached by a footpath, is 132 feet high. Above it are seen several of the large rock towers.

DISTANCES FROM TOWER FALLS (TF) AUTOMOBILE CAMP to Roosevelt Lodge 2.6; Tower Junction (TJ) 2.8; Buffalo Ranch 13.6; Cooke, Montana 36.7; to Mammoth Springs (MS) 20.4; to North Entrance (NE) 24.9 miles.

PHOTOGRAPHING. Be cautious in photographing bears, and remember that they are not always to be trusted. Pictures of bears are usually under-exposed due to their dark color. Tower Falls may be photographed at most seasons up to shortly before noon at which time the shadows begin to envelop the falls. To show good water detail in good light take your movies at F11 without a filter and your stills at $1/25$ th of a second without a filter at about F11.

FISH AND FISHING. In the Yellowstone River are Rocky Mountain Whitefish, Redthroat (Cutthroat, Blackspotted, Native) Trout, Rainbow Trout, Scotch Lake Trout (Loch



ROOSEVELT LODGE NEAR TOWER FALL JUNCTION

27463

Leven) and Eastern Brook Trout (Speckled). One may fish the waters of Yellowstone National Park without a license but outside of the park boundary in Montana one must have a license. Fishing tackle may be procured at the Haynes General Store.

OVERHANGING CLIFF (Mileage 31.4) is interesting in that the highway has been built wholly under the overhanging basalt. Across the Canyon of the Yellowstone are seen the pentagonal rock columns of basalt which resemble a man-made stockade. The highway is about a thousand feet above the river at this point.

NEEDLES (Mileage 31.6) are seen at the right. These rock towers are responsible for the name of Tower Creek and Tower Falls.

ROOSEVELT LODGE (Mileage 33.1) is a short distance at the left of the highway. It is operated by Yellowstone Park Lodge and Camps Company and consists of a large central building and a number of cabins. (Not housekeeping cabins). This Lodge is run on the American plan the same as the lodges at Mammoth, Old Faithful and other points in the park. Saddle horses are available here with competent



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VALLEY RANCH PARTY ON HOWARD EATON TRAIL

guides in charge for many interesting rides in the vicinity.

HORSEBACK TRIPS FROM ROOSEVELT LODGE. Six mile round trip to Garnet Hill and Petrified Tree. Twelve mile round trip to Specimen Ridge.

TOWER FALLS JUNCTION (Mileage 33.3). The right hand road offers a very interesting side trip to the following features, but one must return to this junction as the side road does not lead out of the park. **BEAVER DAMS** (Mileage 34.0) are seen at the left of the highway. **YELLOWSTONE RIVER BRIDGE** (Mileage 34.1) is near the site of the old Baronett bridge which was destroyed many years ago. Its abutments still remain and may be visited by a path leading to the left a few hundred yards down-stream from the far end of the present bridge. **LAMAR RIVER BRIDGE** (Mileage 38.1) next is crossed. **BUFFALO RANCH** (Mileage 44.1) is maintained by the National Park Service in connection with the care of about a thousand buffalo which constitute the main herd in the park. In the summer time these wild buffalo range far up in the hills and cannot be seen from the highway. **SODA BUTTE** (Mileage 50.1) is a high, now extinct hot spring cone.



VALLEY RANCH PARTY IN CAMP

Nearby is a RANGER STATION. COOKE, MONTANA (Mileage 67.2) is a quaint mining town which came into being very early in the history of the state. It is situated in the heart of a group of towering mountains outside of the park and at the foot of REPUBLIC MOUNTAIN. GRASSHOPPER GLACIER where millions of grasshoppers are imbedded in the ice is accessible only by horseback, the round trip from Cooke totaling about 25 miles. Horses, competent guides and permanently established camps are provided. The highway leads a short distance beyond Cooke, but it is necessary to return from here 33.9 miles to Tower Junction. Cooke is just a short distance outside of the northeast corner of the park.

(When you return again to Tower Junction set speedometer at the mileage of 33.3 and turn right.)

TOWER FALLS RANGER STATION (Mileage 33.5) is the headquarters for the rangers of this district.

ROAD JUNCTION (Mileage 34.7). Left road goes to the PETRIFIED TREE (Mileage 35.2) where one of the largest specimens in the region is seen. This stump was partly excavated to show it to advantage. This same hillside has at least 50 other stumps but only the tops of them show. If

you will take the trouble to explore this hillside you will be amazed at the size and number of these petrifications which are several million years old. You are cautioned to not collect or take away any specimens, but cooperate with the National Park Service in the complete preservation of all the park exhibits. (From here we return to the main highway at which point the speedometer is set back to 34.7.)

UNDINE FALLS (Mileage 46.8). From here a trail at the right leads to the falls. The flat topped mountain is Mount Everts which is mostly sedimentary (cretaceous) and fossil bearing, however it will be observed that there is a layer of volcanic rock at the top.

GARDINER RIVER TRESTLE (Mileage 49.3) is the highest and longest one in the park. At the left is BUNSEN PEAK named in honor of the famous German physicist Dr. Robert W. Bunsen who studied the geysers of Iceland and evolved the generally accepted theory of geyseric action applicable to all geysers including those in the Yellowstone.

MAMMOTH PUBLIC AUTOMOBILE CAMP (Mileage 50.8) is at the right. Here the companies operating in the park have provided all of the services demanded by park guests including housekeeping cabins, cafeteria, general store, Haynes Picture Shop specializing in overnight photo finishing, and a Fuel Yard where split wood in bundles of convenient size is available.

MAMMOTH HOT SPRINGS JUNCTION (Mileage 50.9) (Symbol MS). The left road leads to Mammoth Hotel and Mammoth Lodge, the Museum and Information Office and the office of the Superintendent of the park. The right hand road leads to the Northern Entrance of the park 4.5 miles distant.

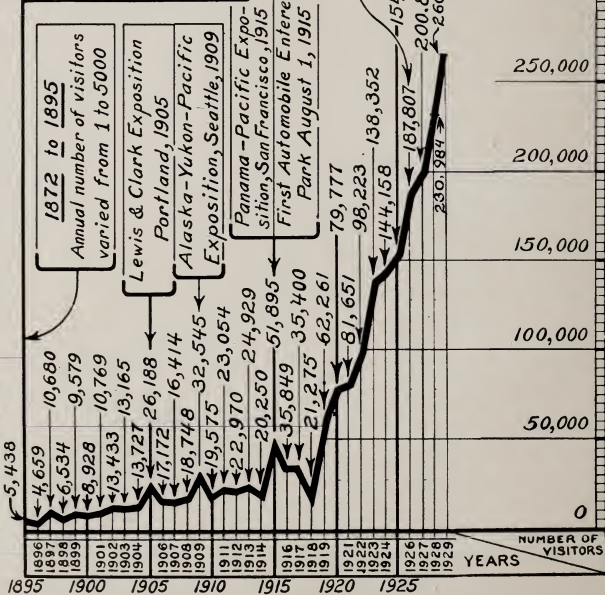
(For continuation of the description of the park tour from this point turn back to page 21.)

The park was established by an act of Congress, signed by Pres. Grant, Mar. 1, 1872.

Haynes TRAVELGRAF OF YELLOWSTONE NATIONAL PARK

Showing total number
of visitors each year
since 1894. A Compila-
tion from U.S. Govern-
ment records.

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Historical

ALTHOUGH part of it was included in the great Louisiana Purchase of 1803, the Yellowstone Park was not then known to white men. Probably the first one who ever saw any of its hot springs or geysers was John Colter who left the celebrated Lewis and Clark Expedition which was on its return to St. Louis, in 1806, and started for the headwaters of the Yellowstone River to trap and hunt. This lone adventurer passed northward in 1807 from the mouth of the Big Horn to the Forks of the Shoshone River where he discovered an immense tar spring; he continued on through a country where much hot spring and geyser phenomena exist and down the Yellowstone River to the ford at Tower Fall, thence out near the northeastern corner of what is now the National Park.

After four years of peril among the Indians and a miraculous escape from the hostile Blackfeet, he returned in 1810 to St. Louis. His wonderful tales were hard to believe and the place he described (which was thought to be the product of his imagination), was termed "Colter's Hell."

John Colter

1807

By OLIN D. WHEELER

In May, 1804, there left the village of St. Louis, a party of explorers bound for the mouth of the Columbia River. This exploration was planned by President Jefferson, and, after Congress sanctioned it, was placed in charge of Meriwether Lewis, Mr. Jefferson's private secretary. Lewis associated with him as an equal in command, his particular friend Captain William Clark, and this national adventure, as it may well be termed, is known as the Lewis and Clark Expedition. It traveled in small boats up the Missouri River and the Jefferson River, a continuation of the Missouri, to the limit of navigation; crossed the Rocky Mountains to the Clearwater River, on horses procured from the Shoshone Indians; navigated that stream and the Snake and Columbia rivers in



BEAVER HUT IN WINTER

canoes made by themselves from pine trees; spent the winter of 1805-6 near the present city of Astoria, Oregon, and returned in 1806 by much the same route, reaching St. Louis in September, 1806, having most successfully accomplished its mission with the loss of but one man.

The party consisted of forty-five persons when it left St. Louis, the greatest care being used to obtain men specially fitted for the peculiar duties and dangers to be encountered. Men of strong, healthy bodies and alert minds were needed and, naturally, men well acquainted with border life in all its peculiar phases were chosen.

Aside from the leaders themselves, the man who achieved the most eminence was John Colter, and curiously enough it was the result of adventures and feats performed in the years immediately following the return of Lewis and Clark. His duties on that noted exploration were carried out satisfactorily to his chiefs, but he is entitled to no distinction in this respect above his fellow comrades.

When these explorers, on their return, arrived at the villages of the Mandan Indians near the mouth of Knife River, North Dakota, where they had wintered in 1804-5, they met

two white men, trappers, on their way to the smaller tributary streams of the Yellowstone and Missouri rivers in the wilds of what is now Montana. The trappers offered Colter such inducements to go with them that he asked Lewis and Clark for his release, which was granted. He, accordingly, and before returning to the delights of frontier civilization, such as they were, buried himself once more in the wilderness for several years. This time was spent in trapping beavers and other animals, which then were most abundant in the mountain streams, for their furs which were extremely valuable. During this time Colter passed through the experiences and performed the exploits which have made him a historical character.

The man seems to have been a natural rover and adventurer. The lure of the plains and prairies and mountains, with their magnificent distances, marvelous mirages, beautiful vistas, unique and wonderful canyons, entrancing waterfalls, great rivers, alpine crags and peaks, cool, timbered plateaus, gorgeous sunsets and game dotted valleys and parks; to roam abroad in solitude, afar from the haunts of men, where boundless forests and pine and snow topped mountains enclosed him about, and wild beasts—bisons and elk and deer and bears and mountain lions ranged or made their lairs, seems to have just suited his temperament.

It is to be regretted that we have not a fuller and more detailed account of the adventures of this remarkable man after he ceased his connection with Lewis and Clark. He doubtless did recount to many individuals the experiences which befell him, but they were probably considered as not at all unusual for the time and hence little or no attempt was made to preserve them. More likely, they were thought to be utterly beyond credence, and, so unworthy of preservation. The stories of these mountain men and plains wanderers were, in those days, received by the dwellers in the towns and settlements on the frontier with much disbelief, and many who did believe them were ridiculed for their credulity. But some of his stories were told to men who appreciated their historical value. To John Bradbury, an English naturalist,



ELK IN WINTER

and Henry M. Brackenridge, a traveler and writer, we are indebted for such knowledge as we have regarding Colter after 1806.

As the late General H. M. Chittenden well says, the glimpses of Colter's record as given by these two men "clearly indicate that he was a man of superior mettle to that of the average hunter and trapper."

While "these glimpses" are fragmentary they justify General Chittenden's statement, but they leave much unrevealed as to Colter's movements. He and the two trappers apparently wintered during 1806-7 on the Yellowstone River or some one of its tributary streams. At that time these streams abounded with beavers.

In the summer of 1807 some reason not definitely known, impelled Colter, whether alone or in the company of Crow or other Indians, is not known, to make an extended journey into territory not covered by Lewis and Clark, but adjacent thereto. In doing this Colter, without knowing it, made the discovery, of world interest, which alone would have im-

mortalized him on the pages of history. This discovery, fortunately, for the world, attracted no particular attention for more than sixty years. This was owing to the fact, before stated, that the tales of these mountaineers and adventurers were so largely disbelieved, and were forgotten almost as soon as told. COLTER IN HIS WANDERINGS OF 1807 DISCOVERED THE MARVELOUS REGION NOW KNOWN AS YELLOWSTONE PARK. There can be no dispute as to this because Lewis and Clark in their voluminous report of their expedition which did not appear until 1814, in a map of the Rocky Mountain region show "COLTER'S ROUTE IN 1807," the trail being distinctly marked.

Colter's trail has been the subject of some discussion. He evidently started from, and returned to, his camp on Pryor's Fork, or creek, in Montana. He crossed the various detached ranges of the Rocky Mountain chain between the headwaters of Wind River and those of the Snake River, passing around the southern end of Jackson Lake, Wyoming. Then traveling north he soon recrossed the mountains, north of Jackson Lake, to Yellowstone Park, skirted the west side of Yellowstone Lake, followed, evidently, the well known lower Mt. Washburn trail along the rim of the Grand Canyon to Tower Fall, forded Yellowstone River at that point, and then returned to his starting point.

Colter on this trip visited none of the large geyser basins judging from his trail. Besides Lakes Jackson and Yellowstone and the Grand Canyon, Colter must have seen Lewis and Shoshone Lakes, the paint pots, hot springs and small geysers at the West Arm of Yellowstone Lake, the three falls at the head of the Grand Canyon and many of the hot pools and mud springs found along his route and particularly those between and about the Grand Canyon and Tower Fall. He may have visited Mammoth Hot Springs, as a point marked "Hot Springs, Brimstone," across the mountains north of the Grand Canyon, may stand for that interesting locality with its wonderful nature painted terraces, hot pools and caves.

This, in brief, rehearses the story of the now historic trail and discoveries of this hardy, intrepid ranger of the wilds,

when the outposts of civilization and border settlement were a thousand miles to the eastward. To fill in the details, the days of toil and fatigue, of burning heat and drenching storms, of thirst and hunger, danger from wild beasts and accident—these the imagination must picture.

James Bridger

1830

By OLIN D. WHEELER

Among the many men engaged in the old frontier life, none achieved a wider, more enduring and deserved reputation for all that such a life demanded, than did the redoubtable James Bridger.

The story of his career well illustrates what the life of that class of men was, the hardships they encountered and how they endured them, the rude border surgery practiced, the dangers to which they were hourly exposed, their bravery and resourcefulness, the distinguishing abilities disclosed now and again, by conspicuous examples in, perhaps, most unexpected ways, and the suddenness with which death came to so many of them.

Bridger was a native of Virginia, and was born in Richmond in 1804. His father is said to have been a farmer and also a hotel keeper in Richmond. When young James was about eight years old the family migrated to Missouri, near St. Louis, where the father followed the calling of surveyor. The mother died in 1816, and the father in 1817, leaving two children, James and a sister, who were cared for by an aunt who later became the wife of John Tyler afterwards President of the United States. The latter, therefore, became an uncle to Bridger by marriage. James, after his father's death supported his sister and himself. At one time he ran a flatboat ferry and again he was apprenticed to the blacksmith's trade.

All this disbelief aroused, not unnaturally, the ire of "the old man of the mountains," and he concluded that he would live up to the reputation placed upon him.



JAMES BRIDGER

17476

It has been well said that then "He did not hesitate to 'guy' the unsophisticated."

Near the southeast corner of Yellowstone Park and not far from the present park boundary, is one of Nature's most remarkable productions particularly from a geographic standpoint. It is known as Two Ocean Pass and comprises two small streams, Pacific and Atlantic creeks, flowing into each other in such a way that water from each one passes into both the Atlantic and Pacific oceans. This very interesting spot was also discovered and made known to the world by Bridger. Aside from the geographic fact mentioned Two Ocean Pass is interesting in another way. It was early noted that in all the streams in Yellowstone Park having falls, with one exception there were plenty of trout below the falls, the

latter proving obstacles that the trout could not surmount, and, therefore, no fish were found above the numerous falls. The one exception noted was the Yellowstone River, the largest stream of all and with two high falls near together and impossible for trout to overleap. Here there were trout above as well as below the falls. For a long time the question as to how the trout happened to be found in the upper river waters, was a puzzling problem. Finally it was discovered that at high water small trout native to Pacific Coast waters were able to go through the Two Ocean Pass into Yellowstone River and Lake above the two high cataracts near the Grand Canyon, where they are found today.

Just north of the junction of Atlantic Creek and Yellowstone River is a small lake named in honor of this mountaineer, Bridger Lake.

In 1865-6 Bridger was connected with the late General G. M. Dodge, Chief Engineer of construction of the Union Pacific Railway, as scout and guide. General Dodge conceived a strong liking and admiration for the old plainsman and, after the death of the latter, finding that his remains were interred on his farm and the grave was being neglected, he obtained a beautiful burial site in Mount Washington Cemetery, Kansas City, had the remains removed thereto, and erected a fine monument over them suitable to the character and achievements of the man. The writer made a special visit to this cemetery and grave some years since and was glad indeed to see that the noted old trapper and mountaineer had found such a beautiful resting place, at the end of his long, rough life journey.

General Dodge, who himself but recently passed away, published a pamphlet recounting in some detail the life history and adventures of this remarkable frontiersman.

"I found Bridger," he says, "a very companionable man. In person he was over six feet tall, spare, straight as an arrow, agile, rawboned and of powerful frame, eyes gray, hair brown and abundant even in old age, expression mild and manners agreeable. He was hospitable and generous, and was always trusted and respected. He possessed in a high degree the

confidence of the Indians. He was one of the most noted hunters and trappers on the plains.

"While engaged in this thorough system of trapping, no object of interest escaped his scrutiny, and when once known it was ever after remembered. He could describe with the minutest accuracy places that perhaps he had visited but once, and that many years before, and he could travel in almost a direct line from one point to another in the greatest distances, with certainty of always making his goal."

Major Bridger was three times married, each time to an Indian woman. His first wife was the daughter of a Flathead, or Selish, Indian chief and she died in 1846, leaving two children, who were sent to St. Louis to school. The second wife was a Ute Indian woman. She died in 1849, leaving a little baby that was brought up on the milk of a buffalo, or bison, and grew to womanhood and married. In 1850 Bridger married a Snake, or Shoshone, woman who died in 1858, leaving two children.

The end came on July 17, 1881, at 77 years of age. And what crowded, eventful years they had been where he had trailed and camped and feasted and starved, and roughed it in every conceivable fashion, and fought Indians and Whites. He passed away at just the right time for the old west as Bridger had known it—was also gone.

And what a change in the Yellowstone of Colter and Bridger! During their lives no one would believe their wonderland stories. Now, the Yellowstone, the first and precursor of all our National Parks, is visited each season by nearly 100,000 persons, from all parts of the world—"Sic eunt fata hominum."

The Park had been described in part by some of the early hunters, but their knowledge of the place was limited, due to the fact, no doubt, that the region was so difficult to explore; and it is a fact worthy of note that until 1842 no written description of these geyser regions had ever appeared. But in that year the first description of the geysers was seen in print, but the author's name was not revealed.

In the year 1900, however, Mr. Olin D. Wheeler, of St. Paul, the author of the well-known "Wonderland Series of the Northern Pacific Railway" and of "The Trail of Lewis and Clark," discovered the identity of the writer. He was Warren A. Ferris of the American Fur Company, whose early home had been in western New York. In 1834 with two Indians he visited one of the geyser areas, it is not definitely known which, and wrote the description noted which was first printed in the Western Literary Messenger of Buffalo, in July, 1842, from which the Wasp, a Mormon paper of Nauvoo, Illinois, copied it without giving credit to the Messenger. Ferris died near Dallas, Texas, in 1873.

Warren Angus Ferris

1834

By OLIN D. WHEELER

Closely following the discoveries and knowledge of the park region gained by Bridger, and his imaginative and extravagant tales of it, exaggerated for a purpose, the third member of the Human Triangle Heroic made the visitation which in time has immortalized him. But, it was long ere the identity of this individual was ascertained.

On August 13, 1842, the Wasp, a Mormon newspaper of Nauvoo, Illinois, the locus of the Mormon people prior to the migration to Utah, published an article by an unknown writer recounting his journey to, and observations on, the geysers and hot springs in the western part of the park region. "And now doth time waste" itself for the story of these wonders, probably largely disbelieved, passed into oblivion and not until full thirty years later was it resurrected and made a part of the recognized literature of the park. And still no hint of the personality of the explorer and litterateur.

Then Fortune was, indeed, kind to the present writer. A friend interested in the park informed me of an article incidentally seen by him, which I at once surmised was the Wasp production here mentioned, which was unknown to my

informant. Curiosity was piqued when the publication containing the dissertation was found to be an eastern one.

A few days later Volumes II and III of the *Western Literary Messenger* of 1842-44, published in Buffalo, N. Y., were handed to me and lo! there, in the issue of July 13, 1842, was the original story as printed by the *Wasp*, but without showing the authorship. The reprint by the *Wasp*, therefore, without even giving credit to the *Messenger*, necessarily was shown without the writer's name because it was unknown to the *Wasp*.

From bound volumes of the *Messenger*, kindly forwarded to me by one of the Buffalo Libraries, and correspondence with members of the Ferris family at Buffalo, I was able to develop something of the life of our third member of the Human Triangle Heroic.

Warren Angus Ferris, of Quaker parentage, was born at Glens Falls (presumably), N. Y., December 26, 1810. About the beginning of the War of 1812, his parents removed to Erie, Pennsylvania, where his father, Angus Ferris, became one of the earliest owners of vessels on the Great Lakes and was engaged in furnishing supplies to the American army. The father died at Erie, September 10, 1813, the day of Perry's victory at Put-in-Bay, and in 1814 the widow and her two children removed to Buffalo, New York.

Ferris received a good education for that day as a civil engineer. Upon returning from the Rocky Mountain country he removed to Reinhardt, Texas, married and raised a family, and died in 1873 at the age of sixty-three years.

He followed his engineer's calling in Texas and attained to worthy eminence among the people.

His life among the mountains never lost its hold upon him, which, those of us who have passed through the same experiences in one way or another that he did, easily understand.

The two principal claims to distinction that Ferris possesses in connection with the history of Yellowstone Park, are first, that he was, unlike Colter and Bridger, a well educated man for that day. Second, that he was the first person to

write and have published a descriptive tale of the region, its hot water reservoirs and fountains. And this, be it remembered, was at a very early period in the history of the west; before Whittier, who could have visioned, could not yet hear, "The Tread of Pioneers" and the "First Low Wash of Waves" which was soon to "Roll a Human Sea" over the wide and wandering game dotted plains and forest canopied mountains, of that "One Stupendous Whole Whose Body Nature Is."

This Human Triangle Heroic—Colter, Bridger, Ferris, as "Time, the beautifier of the dead" continues in the future to "roll his ceaseless course" along, deserve at least the reasonable respect and acclamation of American humanity and history.

Simple and unlearned, for the most part, "rude forefathers of the hamlet," as present or future generations may look upon them, each and all three filled, in their time, and as God had fashioned them, a niche of life and history that many a man far more learned in book lore and knowledge as the world looks upon it, would give a large stake, to pass across the last divide so worthily and deserving the "well done," as did they. Of each one, indeed, I trust it is "Requiescat in Pace."

Captain W. F. Reynolds' Expedition could not penetrate the region when it attempted to explore it in 1860, on account of the snow encountered; the party encircled it however and learned much from the tales of hunters and trappers who had visited it. Captain Reynolds in his report on the "Exploration of the Yellowstone" in 1859-60 states regarding the "Munchausen Tales" about the Park:

"One was to this effect: 'In many parts of the country petrifications and fossils are very numerous, and, as a consequence, it was claimed that in some locality (I was not able to fix it definitely) a large tract of sage is perfectly petrified, with all the leaves and branches in perfect condition, the general appearance of the plain being like that of the rest of the country, but all is stone; while the rabbits, sage hens and other animals usually found in such localities are still there, perfectly petrified, and as natural as when they

were living; and, more wonderful still, the petrified bushes bear the most wonderful fruit; diamonds, rubies, sapphires, emeralds, etc., etc., as large as black walnuts, are found in abundance.' "

Captain John Mullan mentions the Park geysers in his report to the government in 1863 and states that he visited them.

The following is taken from the report made to the late Dr. F. V. Hayden, chief of Geological Survey of Territories, by Henry Gannet, E. M., on the geographical field work of the U. S. Geological Survey during the season of 1878:

"The story of the remarkable fruit borne by these stone trees is not far from correct, the main difference between the story and the fact being that the fruit is borne on the outside and inside of the trunk of the trees, instead of on the ends of the branches. The mineral species are not as given in the story, either, but this is a matter of no vital importance. In the process of the silicification of wood the last result of all is the production of quartz crystals. The trunk is converted totally into crystalline quartz, radiating from within outward, the crystals being all crowded out of shape. The inside and outside of the hollow cylinder of quartz, which represents the former tree, are covered with the characteristic quartz pyramids. Such products of silicification are very abundant in the Park, particularly on Amethyst Ridge, and are, undoubtedly, the stone fruit of the petrified trees and bushes. The crystals are colorless, amethystine or yellow, and according to the color, are known to the mountain men as diamonds, amethyst, topaz, etc. It is unnecessary to say that the part of the story relating to animal life was manufactured from the whole cloth.

"In 1863, Captain W. W. DeLacy, in command of a large party of prospectors, left Montana to prospect on the upper waters of the Snake. Striking that river near the junction of Henry's Fork, they followed up the main river through the canyon, prospected in Jackson's Hole, and, not finding gold in paying quantities they broke up the party, some returning



EXPLORER C. W. COOK AND DIRECTOR H. M. ALBRIGHT

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one way, some another. Captain DeLacy, with a portion of the party, followed up the Snake and Lewis Fork, discovering Lewis and Shoshone (DeLacy's) Lakes, the Shoshone and the Lower Basins. The geographical work done by Captain DeLacy on this trip was embodied in a map of Montana, drawn by himself, and published by authority of the territory in 1864-65, and the material thus made public was afterwards used by the land office in the compilation of maps of that region.

"The results of this trip seem to have attracted little or no attention, for we hear of no one going into the country until 1869, when the prospectors, Cook, Folsom and Peterson, made a prospecting tour through the park. They followed the Yellowstone up to the mouth of the East Fork, then up the latter stream for a few miles, crossing over to the Yellowstone at the Great Falls; thence they went up this stream to the foot of the lake and around the east side of the latter to the extremity of the west arm; thence crossing over to Shoshone Lake and Lower Geyser Basin on the Madison or

Firehole and finally left the country by following down the Madison River."

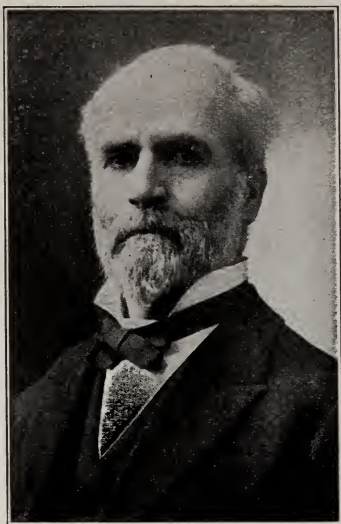
Their story, written by C. W. Cook and David E. Folsom, and published in the Chicago Western Monthly for July, 1870, immediately attracted attention. C. W. Cook, who attended the semi-centennial celebration of the establishment of the Yellowstone held in 1922 at National Park Mountain, states regarding changes noted since his trip of 1869 as follows:

"In visiting the park after an absence of fifty-three years, I find considerable changes. The Mud Volcano is absolutely changed, its activity now being unworthy of much attention. At that time it was so active that it was almost impossible for us to sleep in our camp on the river almost half a mile away. The features at the Thumb have become so changed that they are of less interest now. We did not see the Excelsior Geyser in the Lower Geyser Basin in action while we were there in 1869, but at that time the crater appeared to be much smaller than now, and was full and overflowing with boiling hot water."

The following summer, 1870, a party, composed of prominent citizens of Montana, under the leadership of General Washburn, then Surveyor General of Montana, was made up for the purpose of exploring this region. Among the party were N. P. Langford, first superintendent of the Park, Cornelius Hedges, T. C. Everts, S. T. Hauser and Lieut. G. C. Doane.

The late Olin D. Wheeler, author and historian, in speaking of N. P. Langford's "The Discovery of Yellowstone Park, 1870," (published by J. E. Haynes, St. Paul), has said:

"In 1870 the Washburn party, escorted by a small contingent of U. S. Cavalry, ventured into the untrailed wilderness and mountain fastnesses now known as Yellowstone National Park. Adventures and hardships of varying sorts befell them; a near-tragedy and possible death afflicted them. They returned from a month's wanderings to electrify their countrymen with their tales of what Nature, unknown to us,



NATHANIEL P. LANGFORD

17477

had so marvelously accomplished through fire and ice in the long ago.

"Nathaniel P. Langford, my esteemed friend of years, who so recently followed the winding trail across the Shadowy Divide, was the diarist of the party, who, most assiduously, and with a blessed prescience, chronicled in this narrative faithfully and in detail, the heroism and success of these explorers. Descriptively and historically the story stands out in the park literature even as Langford stood out among his fellow men, to the end.

"To the Washburn party we owe the establishment of the park in 1872; and one who desires to have a knowledge of the park in its entirety misses much if he does not possess this unpretentious but classic narration."

Many of the prominent features of the Park were named by this party—Mount Washburn, the famous promontory,

Old Faithful, the Castle and Beehive Geysers, National Park Mountain, and many other points of interest.

While near Yellowstone Lake, Mr. Everts strayed from the party and was lost in an almost impenetrable country. After a diligent but unsuccessful search for him the party was forced to continue their journey.

In the meantime Mr. Everts had been overtaken by a severe storm and while searching on foot for evidence of a trail, lost his eye glasses and was unable to return to his horses. Thirty-seven days later he was found by Jack Baronette in a starved and half demented condition crawling on his hands and knees. Happily he fully recovered from his unfortunate experience.

Expeditions in 1871 under Dr. F. V. Hayden of the United States Geological Survey, and Captains Barlow and Heap of the Engineer Corps of the Army resulted in the discovery of Mammoth Hot Springs and the route from the Lower Basin to the Yellowstone River. A map of the outline of the Yellowstone Lake was made, and collections of specimens were gathered throughout the region. The reports which followed were very complete.

Until 1872, the region was open to settlers without restrictions on hunting, trapping, gathering specimens and the fencing-in of the geysers for private gain. To avoid these dangers the region was set aside as a National Park, March 1, 1872, when President Grant affixed his signature to the Act of Dedication.

The Act of Dedication of Yellowstone National Park

Approved March 1, 1872

BE IT ENACTED BY THE SENATE AND THE HOUSE OF
REPRESENTATIVES OF THE UNITED STATES OF AMERICA
IN CONGRESS ASSEMBLED:

That the tract of land in the Territories of Montana and Wyoming, lying near the headwaters of the Yellowstone River,



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TRANSPORTATION WAS MOTORIZED IN 1917 REPLACING THE HORSE-DRAWN STAGE COACHES
THE YELLOWSTONE PARK TRANSPORTATION COMPANY OPERATES TO AND FROM ALL PARK ENTRANCES, AND SERVES ALL THE HOTELS AND PERMANENT LODGES IN THE PARK

and described as follows, to-wit: Commencing at the junction of Gardiner River with the Yellowstone River, and running east to the meridian passing ten miles to the eastward of the most eastern point of Yellowstone Lake; thence south along the said meridian to the parallel of latitude passing ten miles south of the most southern point of Yellowstone Lake; thence west along said parallel to the meridian passing fifteen miles west of the most western point of Madison Lake; thence north along said meridian to the latitude of the junction of the Yellowstone and Gardiner Rivers; thence east to place of beginning—is hereby reserved and withdrawn from settlement, occupancy or sale under the laws of the United States, and dedicated and set apart as a public park or pleasure ground for the benefit and enjoyment of the people; and all persons who shall locate, settle upon or occupy the same or any part thereof, except as hereinafter provided, shall be considered trespassers and removed therefrom.

Sec. 2. The said public Park shall be under the exclusive control of the Secretary of the Interior, whose duty it shall be, as soon as practicable, to make and publish such rules and regulations as he may deem necessary and proper for the care and management of the same. Such regulations shall provide for the preservation from injury or spoliation of all timber, mineral deposits, natural curiosities or wonders within said park and their retention in their natural condition.

The Secretary may, in his discretion, grant leases for building purposes, for terms not exceeding ten years, of small parcels of ground, at such places in said park as shall require the erection of buildings for the accommodation of visitors; all the proceeds of said leases, and all other revenues that may be derived from any source connected with said park, to be expended under his direction, in the management of the same, and the construction of roads and bridle paths therein. He shall provide against the wanton destruction of the fish and game found within said park, and against their capture or destruction for the purpose of merchandise or profit. He shall also cause all persons trespassing upon



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the same after the passage of this act to be removed therefrom and generally shall be authorized to take all such measures as shall be necessary or proper to fully carry out the objects and purpose of this act."

In 1873 Captain W. A. Jones took a large party through the Park. He entered it from the head of the Stinking Water, crossing one of the many passes near Mt. Chittenden. After visiting most of the points of interest in the Park he left via the Upper Yellowstone, on the way verifying the old trapper's legend about the "Two Ocean River," and discovering Togwotee pass and a route from the south to the park. This discovery was by far the most valuable result of the expedition.

In 1875 Captain William Ludlow, U. S. A., in charge of a reconnaissance in Central Montana, made a hurried trip in the park, and developed little that was new save more accurate measurements of the Upper and Lower Falls of the Yellowstone.

General O. O. Howard crossed the Park in his famous pursuit of the Nez Perce Indians in 1877; the year that

P. W. Norris was made superintendent to succeed N. P. Langford who had held that office five years. Mr. Langford did more for the Park than can be reckoned; he served as superintendent without pay or remuneration of any kind and had upheld the "National Park Idea" from the time the Expedition of 1870 talked of the plan until the Act of Dedication was finally passed in 1872.

The United States Geological Survey resumed work in the Park in 1878 under Dr. F. V. Hayden; and in 1883 a report was published giving detailed descriptions of the points of interest, as well as scientific discussions of the phenomena observed. This report is beautifully illustrated with color-plates, engravings, diagrams and maps.

In August, 1883, President Arthur with the Secretary of War, Lieutenant-General Sheridan of the Army, Senator Vest, and several other distinguished officers and civilians visited the Park in the most elaborate packtrain expedition that has ever been enrolled. The route lay from Green River on the Union Pacific R. R., to Livingston on the Northern Pacific Railway.

F. Jay Haynes, at that time authorized photographer of the Park, accompanied the party and procured many interesting photographs of the places visited by this famous expedition.

WINTER EXPLORATION IN 1887.—In January, 1887, the first successful winter exploration of the Yellowstone region was made. Lieutenant Frederick Schwatka of Arctic fame headed the party consisting of several eastern men, F. Jay Haynes, photographer, and a corps of guides, packers and assistants. Their outfit consisted of astronomical instruments, photographic equipment, sleeping bags and provisions which were drawn on toboggans; the party used Norwegian skis and Canadian web snowshoes, but the snow was so light that they sank readily and the toboggans were exceedingly difficult to draw. LL

Lieut. Schwatka fell ill at Norris and was unable to proceed. Mr. Haynes with Scout Ed. Wilson and two assistants

pushed on in order to get a complete set of photographs of the park in winter.

The toboggans were abandoned and this party packed their equipment and provisions on their backs—each man carrying about forty-five pounds.

Norris Basin was a gorgeous sight. Craters heretofore unnoticed by these men familiar with the Park in summer, steamed conspicuously. The foliage was heavily laden with ice near the steam vents and geysers, producing all the fantastic forms possible to imagine; while the entire basin resembled a vast manufacturing center.

Tall trees buried in the snow appeared like bushes, and the general aspect of the country was completely changed; the average depth of the snow being about eight feet.

The steam rising fully two thousand feet from the geysers at Upper Basin could be seen from the Lower Basin.

The beautifully colored walls of the Grand Canyon were masses of pure white. The north half of the Great Fall hung in immense icicles 200 feet in length. An ice bridge fully 100 feet high was formed at the base of the fall, coming up to the spray line (about one-third the height of the fall). The brink was frozen over and was hidden in an arch of ice a dozen feet thick.

Thousands of elk were seen on the exposed ridges of Mt. Washburn. The trip over Mt. Washburn was one of most unusual hardship and privation; a blinding snowstorm which lasted four days overtook the party of four. During this entire time they wandered day and night without shelter, provisions or fire before reaching Yancey's ranch, an experience that nearly cost them their lives.

The circuit covered was about 200 miles, and the thermometer ranged from 10° to 50° below zero during the twenty-nine days of the trip.

WINTER EXPEDITION OF 1894.—Early in March, 1894, a party was organized at Fort Yellowstone to visit the winter ranges of the animals, to ascertain the number of buffaloes and photograph them. The party consisted of Captain Scott, Lieut. Forsyth, Scout Burgess, Robert Burns, Photographer



THE POACHER (RIGHT), HIS DOG AND CAPTORS

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Haynes, and three non-commissioned officers. On Norwegian skis, with packs of sleeping bags, provisions and camera, they proceeded directly to Hayden Valley via Norris and the Grand Canyon. They found eighty-one buffaloes in the valley, seventy-three in one herd; and numerous groups of elk. After several days in Hayden Valley the party went to Yellowstone Lake. Captain Anderson, superintendent of the Park, had instructed Scout Burgess not to overlook the country east of the lake, as a small herd of buffaloes usually wintered there. The first day out from the lake they pitched camp about twelve miles up Pelican Creek.

Emerson Hough, eminent writer, and Billy Hofer spent many days in the park at the same time—the two parties met at the Canyon.

The second day they discovered the "cache" of a poacher, very much to their surprise. It consisted of a canvas tepee, sleeping bag, provisions and toboggan and six buffalo heads suspended in a tree. A trace of fire in the tepee led them to believe that the poacher was in the vicinity, and to capture him was the next move. As it had been snowing constantly all ski tracks leading from the camp were obliterated. Some

Harris & Ewing



STEPHEN T. MATHER

five miles from the camp, however, they heard five or six rifle shots in rapid succession. Hastening through the timber to an opening they came directly upon the poacher. He had driven six of the buffaloes into the deep snow and slaughtered them

all. Fortunately it was snowing hard, and the approach of the scout was not noticed by the poacher or his dog until the arrest was made. He was taken to the Lake Hotel and from there to the guard house at Fort Yellowstone. In addition to the twelve buffaloes that were killed by this poacher a small herd of seven was seen in the Pelican Creek country, making less than 100 then in the Park. Elk were seen in great numbers in the foothills of Mt. Washburn, on Specimen Ridge, along the east fork of the Yellowstone, on Slough Creek and the Yellowstone River to Mt. Everts. Small bands of mountain sheep, deers and antelopes were seen on Mt. Everts. The open water of the Yellowstone between the lake and falls was alive with ducks and swans. Red foxes and coyotes were numerous and an occasional black fox and footprints of mountain lions and bears were seen. The party in about thirty days traveled over 300 miles.

STEPHEN T. MATHER first entered the Department of the Interior on January 21, 1915 as Assistant to the Secretary, Franklin K. Lane, who prevailed on him to relinquish the active management of his private business and take a public office. The urgent need for an organization to assume control incident to managing the steadily growing system of National Parks was evident to both Secretary Lane and Mr. Mather who both worked toward the establishment of the NATIONAL PARK SERVICE, which was created by an act of Congress, signed August 25, 1916, by President Woodrow Wilson.

Mr. Mather resigned as Assistant to the Secretary to accept the commission of Director of the National Park Service on April 19, 1917. In 1915 Mr. Mather first became interested in the management of the National Parks and Monuments. Early in 1929 after serving as Director for almost twelve years Mr Mather found it advisable to resign on account of ill health. On January 12, 1929 his close personal friend Horace M. Albright was appointed Director to succeed him. The accomplishments of Director Mather will long be remembered by friends of the national parks. He has set a splendid example of unselfish, able, public-spirited service in



THE FORERUNNER OF THE AUTOMOBILE STAGE

administering all of the national parks and monuments. He died in January, 1930.

The life and activities of FRANK JAY HAYNES, who passed away on March 10th, 1921, at the age of 68 years, makes an important chapter in the history of Yellowstone National Park.

In 1881, before the Northern Pacific Railway was completed, he drove with horses overland from Bismarck, North Dakota, to the Yellowstone. After making the entire circuit of the Park with his camera he returned with photographic proof that the reports of that wonderful region, brought back by trappers and explorers, had not been exaggerated. In August, 1883, as photographer, he accompanied the distinguished party which included President Arthur, his Secretary of War, Senator Vest, Governor Crosby of Montana, and other prominent men. Later as Official Photographer on two occasions (1887 and 1894), he braved the severe cold and hardships of winter travel in the Park, making extensive trips on skis to secure winter pictures of the animals and natural phenomena.



ONE OF THE FIRST AUTOMOBILES TO ENTER THE PARK
AUGUST 1st, 1915

10213

His closer identification with the Park began in 1884 when he received a concession to conduct a photographic business in the Park, which he held continuously for thirty-two years, until his health began to fail in 1916, when his business was transferred to his son, Mr. J. E. Haynes. In 1898, foreseeing the future possibilities of development of the Western entrance to the Park as a tourist thoroughfare, he organized the Monida & Yellowstone Stage Company, and secured a franchise to operate regular stages through the Park entering from the west. For ten years tourists were taken from the railroad at Monida, Montana, and brought by this stage company for fifty-five miles to the Park. On the strength of his demonstrating the feasibility of this entrance the Union Pacific Railway in 1907 built a branch line to the Western Boundary, and in 1914 the name of his line was changed to the Yellowstone-Western Stage Company. This entrance has since become even more popular than the Gardiner Gateway, 20,151 tourists having been transported by this company in a



HORACE M. ALBRIGHT, NATIONAL PARK SERVICE DIRECTOR 20141

single year, 1915. This company was dissolved following the close of the season 1916 when a new transportation company was formed to take care of rail passengers from all entrances and permitted to use automobiles in place of the horse-drawn stages.

In 1920 Mr. Haynes completed his fortieth consecutive season in the Yellowstone, a record of continuous service and accomplishment without parallel in the history of the development of America's National Parks. His splendid photographs of the Park scenery have been widely distributed all over the world for many years, and their influence in bringing the Yellowstone into its present prominence is beyond estimate. With his death the Park has lost one of its oldest, most unselfish and sincerest friends.

HORACE M. ALBRIGHT, who on January 12, 1929, became Director of the National Park Service, held office as superintendent of Yellowstone National Park longer than any



BECHLER FALLS, BECHLER RIVER

21113

previous superintendent. In 1912 after graduating from college he became a law clerk in the Department of the Interior in Washington, D. C. He assisted in the establishment of the National Park Service; and in 1917, 1918 and 1919 as Assistant Director and Acting Director of the National Park Service took part in many of the greatest events in national park history.

He became Superintendent of Yellowstone National Park in 1919 at the age of 29. He also served as Assistant Director (Field) and during the winter of 1927-8 acted also as Superintendent of Yosemite National Park in California.

Away from the beaten path in the southwest corner of the park are hot springs, lakes, canyons, meadows and a group of falls and cascades of surprising extent and beauty. Moose, elk and deer graze undisturbed in large natural pastures. Trout abound in the many streams.



COLONNADE FALLS, BECHLER RIVER—UPPER 35 FEET, LOWER 67 FEET
COPYRIGHT BY WILLIAM C. GREGG

Several unsuccessful efforts have been made by irrigation interests to either build dams in the park, or have areas suitable for dams removed from the park of which the southwest corner of the park is an example.

This area has been termed the CASCADE CORNER of the park. Batchelder Column, Bechler Falls, Cascade Acres, Cave Falls, Dunanda Falls, Ferris Fork, Gwinna Falls, Littles Fork, Phillips Fork, Quiver Cascade, Ragged Falls, Silver Scarf Cascade, Sluiceway Falls, Tempe Cascade, Tendoy Falls, Three River Junction, Treasure Island, Twister Falls and Wahhi Falls are the approved names for the heretofore unnamed features in the Cascade Corner of Yellowstone National Park as decided by the U. S. Geographic Board in March, 1922. The Board also approved the following names: Bechler River, Terraced Falls and Union Falls.

Other prominent features already named, as shown on the U. S. Geological Survey map are Iris Falls, Colonnade Falls, Ouzel Falls and Rainbow Falls.

Batchelder Column was named for Amos G. Batchelder, Dunanda means Straight Down, Ferris Fork was named for

Warren Angus Ferris early Yellowstone explorer, Gwinna means Eagle, Phillips Fork was named for William Hallett Phillips staunch friend of the Park, Tempe means Cavern, Tendoy was named for a Bannock or Shoshone Indian chief, and Wahhi means double. Ouzel Falls was named for the American water ouzel, a small bird that frequents the region.

The majority of these names were suggested by Mr. Wm. C. Gregg who headed expeditions into the Cascade Corner in 1920 and 1921. Ferris Fork and Ragged Falls were suggested by J. E. Haynes, Yellowstone photographic concessioner.

Both Mr. Gregg and J. E. Haynes made photographs of the principal attractions in this interesting Cascade Corner, while C. H. Birdseye, Chief Topographic Engineer of the U. S. Geological Survey with his assistant, obtained data for a map showing their locations.

OUZEL FALL, 230 feet in height in an unnamed stream in the Cascade Corner is one of the highest in the entire park. CAVE FALLS, in the Falls River is 250 feet wide and 20 feet high. TERRACED FALLS, 65 feet high, is one of the most striking water falls in the region and is only eclipsed by UNION FALLS in Mountain Ash Creek.

A three-day festival beginning in Lander, Wyoming, in August, 1921, terminated August 21 at Togwotee Pass with impressive ceremonies to commemorate the opening of the southern automobile route to Yellowstone National Park.

An impressive ceremony was held at TOGWOTEE PASS in which Horace M. Albright, park superintendent, the governors of several states, and several other prominent people participated. Chief Yellow Calf and Mrs. Yellow Calf were among the group of Indians present which, with their tepees and native attire, lent picturesqueness.

The principal natural attractions along the route are Crow-Heart Butte, the washed bluffs, Pinnacle Butte, Togwotee Pass, Jackson Lake, and the Teton Mountains. From Jackson Lake at Moran, Wyoming, it is but twenty-five miles by the automobile road to the southern boundary of the park.

Emerson Hough, eminent writer, H. M. Albright, park superintendent, Wm. C. Gregg, representing the National



SUPT. H. M. ALBRIGHT, CHIEF OF SEMI-CENTENNIAL CEREMONIES, JULY 14, 1922

Arts Club of New York, and J. E. Haynes, park photographer, visited Cooke and the GRASSHOPPER GLACIER region in 1921.

They rode by auto to Cooke. With saddle horses obtained at Shaw's Camp they spent the morning of the second day climbing the mountains toward the glacier. The last hour of the climb was made on foot through broken rock up a steep slope where horses could not be taken.

The glacier, named for the millions of grasshoppers embedded in its ice, is a solid sheet covering an area of approximately five square miles at the head of Rosebud Canyon on Glacier Peak. The party was enthusiastic and declared this trip well worth taking. The mountain scenery is stupendous and compares favorably with the Swiss Alps. The glacier in its rugged setting with its enormous depth and great expanse, presents a spectacle among the greatest in this country.

While Cooke may be reached by trail from the Cody Road, it is recommended for those who motor, to do this as a side trip from Tower Junction on their trip around the park, as they can drive their cars to Cooke and obtain horses there for the climb to the glacier.



HOWARD EATON AND "DANGER"

11001

Ceremonies commemorating the SEMI-CENTENNIAL YEAR of the establishment of the park were held on July 14, 1922, at the foot of National Park Mountain near the junction of the Gibbon and Firehole rivers where in 1870, in the camp of the famous Washburn-Langford expedition, the "National Park idea" was born. Mr. C. W. Cook of the Cook-Folsom expedition of 1869 attended in person. Mr. Cornelius Hedges, Jr., and W. A. Hedges planted an evergreen tree to mark the spot where their father stood in 1870 when he proposed making this unequaled region a national park. Public officials and prominent friends of the park were on the program. Superintendent Horace M. Albright made a short address recounting the historical development of the park, and read telegrams from President Warren G. Harding, Hon. Albert B. Fall, Secretary of the Interior, Hon. Stephen T. Mather, Director of the National Park Service, and other high officials.

President and Mrs. WARREN G. HARDING, with members of his cabinet, and other high officials, made a two-day tour of Yellowstone National Park in 1923, entering at the North-



SPEAKERS AT HOWARD EATON TRAIL DEDICATION

23327

ern Entrance on June 30th. That day was spent making the trip from Gardiner, Montana, via Mammoth Hot Springs, Norris Geyser Basin, Lower Geyser Basin and Excelsior Geyser region to Old Faithful, where the party stayed overnight. The following day the West Thumb of the Lake, Yellowstone Lake outlet, the Grand Canyon and Tower Fall were visited, and the party boarded the President's special train at Gardiner in the late afternoon.

The OFFICIAL DEDICATION OF THE HOWARD EATON TRAIL took place July 19th, 1923, at Sheepsteater Cliff. The Howard Eaton Trail commemorates the life of Howard Eaton, a famous Western rancher, horseman and guide. Eaton was a neighbor and close friend of Theodore Roosevelt on the Little Missouri river. He conducted more than one hundred horseback and camping parties through Yellowstone National Park and other scenic regions of the Rocky Mountains from Canada to Mexico. Congressman Charles E. Winter, Stephen T. Mather, Director of the National Park Service, Horace M. Albright, Park Superintendent, and other prominent officials and friends



SITE OF HOWARD EATON TRAIL DEDICATION CEREMONIES

23323



PRESIDENT ARTHUR'S PARTY AT UPPER BASIN, AUGUST, 1883

26582



HOODOOS AND HOODOO PEAK

24173

of Howard Eaton participated in the ceremonies. The Howard Eaton Trail is 157 miles long, and connects with other trails, making a total Yellowstone Park Trail system of approximately 1,000 miles. It connects all important scenic attractions reached by the automobile highways, and affords access to many points of scenic and historic interest not formerly accessible.

The splendid Howard Eaton Trail links not only the famous scenic regions of the park but leads also to many points of romantic and historic interest, such as the old home of John Yancey, which might be quite forgotten if park travel were confined to main-line automobile roads.

The trail offers splendid new routes for horseback and foot travel, which has inevitably been crowded from the loop roads by the tremendous development of automobile traffic. The main sections of the trail, with mileage, are as follows: Mammoth Hot Springs to Norris Junction, 20; Norris Junction to Fountain Ranger Station, 18; Fountain Ranger Station to Old Faithful, 11; Old Faithful to West Thumb, 20;

West Thumb to Lake, 20; Lake to Canyon, 16; Canyon to Tower Falls Junction, 20; Canyon to Norris Junction, 14; Tower Falls Junction to Mammoth Hot Springs, 18; total, 157 miles.

In general the trail follows the Grand Loop Road, touching the chief points of interest visited by vehicle travel, yet the trail is sufficiently distant from the road at most points to avoid contact, except at key points of interest. Connecting with the Howard Eaton Trail is a network of branch trails aggregating a total of approximately 1,000 miles.

President CALVIN COOLIDGE, with Mrs. Coolidge and their son John, visited the park August 22-27, 1927, with a party of officials and friends.

In 1927 two former superintendents of the park died—General Lloyd M. Brett and Moses Harris—and one of the prominent early explorers of the park, Charles W. Cook.

In 1928 HERBERT HOOVER, then Secretary of Commerce made a short visit in the park.

In 1929 Ray Lyman Wilbur, Secretary of the Interior and party accompanied by Horace M. Albright, Director of the National Park Service made the complete tour of the park.

Roger W. Toll succeeded Horace M. Albright as Superintendent of the park on February 1, 1929.

Park boundary changes of 1929 were made to include the curious HOODOOS just east of the former boundary and the area of outstanding petrifications now included in the northwest corner of the park.

Improvements made in 1930 include the rebuilding of the road between the Eastern Entrance and Yellowstone Lake, the removal of sharp turns at various points throughout the park, a new road to Artist Point at the canyon, and from Mammoth Lodge to the summit of the terraces.

Companies operating in the park are constantly increasing their facilities to keep abreast of the growth of park patronage. Public automobile campgrounds are growing in size and number.

"Taking a wild animal's picture is a greater feat of woodcraft than knocking the animal over with a bullet."

Table of Administrative Officers

In the Act of Dedication of March 1, 1872 it was provided that the Park "shall be under the exclusive control of the Secretary of the Interior." Below is the complete list of the Secretaries of the Interior and the Administrations during which they served, and dates of appointment.

I—SECRETARIES OF THE INTERIOR

			Administration of President
Columbus Delano	Ohio	Nov. 1, '70	U. S. Grant
Zach. Chandler	Michigan	Oct. 19, '75	U. S. Grant
Carl Schurz	Missouri	Mar. 12, '77	R. B. Hayes
Sam. J. Kirkwood	Iowa	Mar. 5, '81	Jas. A. Garfield
Sam. J. Kirkwood	Iowa	Re-appointed	C. A. Arthur
Henry M. Teller	Colorado	Apr. 6, '82	C. A. Arthur
L. Q. C. Lamar	Mississippi	Mar. 6, '85	Grover Cleveland
Wm. F. Vilas	Wisconsin	Jan. 16, '88	Grover Cleveland
John W. Noble	Missouri	Mar. 6, '89	Benj. Harrison
Hoke Smith	Georgia	Mar. 6, '93	Grover Cleveland
David R. Francis	Missouri	Sept. 1, '96	Grover Cleveland
C. N. Bliss	New York	Mar. 5, '97	Wm. McKinley
E. A. Hitchcock	Missouri	Dec. 21, '98	Wm. McKinley
E. A. Hitchcock	Missouri	Re-appointed	Theo. Roosevelt
Jas. R. Garfield	Ohio	Jan. 15, '07	Theo. Roosevelt
R. A. Ballinger	Washington	Mar. 5, '09	Wm. H. Taft
Walter L. Fisher	Illinois	Mar. 13, '11	Wm. H. Taft
Franklin K. Lane	California	Mar. 5, '13	Woodrow Wilson
John B. Payne	Illinois	Mar. 15, '20	Woodrow Wilson
Albert B. Fall	New Mexico	Mar. 4, '21	W. G. Harding
Hubert Work	Colorado	Mar. 5, '23	W. G. Harding
Hubert Work	Colorado	Re-appointed	Calvin Coolidge
Roy O. West	Illinois	July 25, '28	Calvin Coolidge
Ray L. Wilbur	California	Mar. 5, '29	Herbert Hoover

On August 25, 1916 by Act of Congress the National Park Service was established to administer the national parks and monuments.

II—DIRECTORS OF THE NATIONAL PARK SERVICE

Stephen T. Mather, Illinois	Appointed May 16, 1917
Horace M. Abright, California	Appointed Jan. 12, 1929

III—YELLOWSTONE PARK SUPERINTENDENTS

N. P. Langford	May 10, 1872 to April 18, 1877
Philetus W. Norris	April 18, 1877 to Feb. 2, 1882
Patrick H. Conger	Feb. 2, 1882 to July 28, 1884
Robert E. Carpenter	Aug. 4, 1884 to May 29, 1885
David W. Wear	May 29, 1885 to Aug. 1, 1886

ARMY OFFICERS DETAILED AS ACTING SUPERINTENDENTS

Capt. Moses Harris	1st Cav., Aug. 17, 1886 to June 2, 1889
Capt. F. A. Boutelle	1st Cav., June 2, 1889 to Dec. 19, 1890
Capt. Geo. S. Anderson	6th Cav., Feb. 15, 1891 to June 23, 1897
Col. S. B. M. Young	3rd Cav., June 23, 1897 to May 18, 1898
Capt. James B. Erwin	4th Cav., July 12, 1898 to March 15, 1899
Capt. W. E. Wilder	4th Cav., March 15, 1899 to June 23, 1899
Capt. Oscar J. Brown	1st Cav., June 23, 1899 to July 23, 1900
Capt. Geo. W. Goode	1st Cav., July 23, 1900 to May 8, 1901
Capt. John Pitcher	1st Cav., May 8, 1901 to July 14, 1907
Gen. S. B. M. Young	(Retired) May 14, 1907 to Oct. 27, 1908
Maj. H. C. Benson	14th Cav., Oct. 27, 1908 to Oct. 26, 1910
Co. L. M. Brett	1st Cav., Sept. 30, 1910 to Oct. 16, 1916

ASSISTANT SUPERINTENDENT DETAILED AS ACTING SUPERINTENDENT

Chester A. Lindsley	Oct. 16, 1916 to June 28, 1919
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APPOINTED FROM CIVIL LIFE

Horace M. Albright	June 28, 1919
Roger Wolcott Toll	February 1, 1929

PRESIDENTS OF THE UNITED STATES WHO HAVE VISITED YELLOWSTONE NATIONAL PARK

Chester A. Arthur in 1883
Theodore Roosevelt in 1903
Warren G. Harding in 1923
Calvin Coolidge in 1927
Herbert Hoover while Secretary of Commerce in 1927

Trees of Yellowstone Park

This article and the following one on Flowers are by
Frank E. A. Thone, Ph.D., author of
"TREES AND FLOWERS OF YELLOWSTONE NATIONAL PARK."
(*Published by* J. E. HAYNES.)

About four-fifths of the area of Yellowstone Park is under timber. The park thus forms a great permanent forest reserve. The timber will never be of any importance commercially, for government policy will never permit cutting; but it is of great importance as a headwater, or floodwater, control over two of our great river systems. On the Pacific side of the continental divide rise the headwaters of the Snake river, the largest tributary of the Columbia, and on the Atlantic side, comprising most of the Park, are the watersheds of the principal sources of the Missouri.

A forest acts as a check on floods partly because its shade prevents rapid melting of the snows in the spring, and partly because the dead leaves and rotting wood make a spongy soil that absorbs rain and snow water, permitting it to trickle out very slowly instead of rushing down the slopes as fast as it falls. It is of great importance to the people of the United States in general to preserve intact not only the forests in the National Parks, but also the timber on the headwaters of all the important river systems.

The tree population of the Park consists almost entirely of conifers. About three-fourths of all the trees are LODGE-POLE PINE (*Pinus murrayana*) of the yellow pine group. This tree dominates the park plateau, forming thick stands of tall, slender trees, that bear branches only near the tops. The wood is of small value as lumber, but finds some use as poles and as logs for cabins. The ranger stations throughout the park, as well as the Old Faithful Inn, are built of lodge-pole pine logs.

There are two other kinds of pines in the Park. The LIMBER PINE grows below the general level of the park plateau, principally in the neighborhood of Mammoth Hot

Springs, and the WHITEBARK PINE at the higher altitudes. Both of these trees belong to the white pine series, having their needles in clusters of five, as distinguished from the lodgepole pine, which belongs to the yellow pine series, with its needles in clusters of two.

Second place in numbers of trees and area occupied is held by the DOUGLAS FIR, which has a close competitor in the true spruce, or ENGELMANN SPRUCE. Both of these trees require rather more water than does the lodgepole pine, and are found principally in ravines and on moister slopes. Both form tall, spire-shaped trees, and both have short, rather stiff needles, borne singly all over the twigs. They can be told apart principally by the cones. The cone of the Douglas fir has a small three-pointed bract or appendage projecting between each pair of scales, but in the cone of the true spruce this structure is absent.

Another fine, spire-shaped tree is the FIR, or BALSAM. This is not so abundant as the spruces; where it occurs it is found in company with them. It may be distinguished by the two-ranked arrangement of its needles, by the unusual amount of resinous gum in its bark, and by the fact that its cones point upward instead of hanging downward.

There are two species of JUNIPER, one a tree, usually misnamed CEDAR, and the other a sprawling bush. The leaves are either very small and scale-like, clothing the twigs so completely that the wood cannot be seen, or they are short and tapering with exceedingly sharp, needle-like points. The fruits of the junipers are not cones, but small blue berries covered with a waxy, whitish "bloom."

There are only two kinds of deciduous, or broad-leaved, trees in the Park. The NARROW-LEAVED COTTONWOOD or poplar is found near the Gardiner entrance, in the Lamar valley and a few transplanted specimens at Mammoth Hot Springs. The ASPEN, or QUAKING-ASP, which is also a member of the poplar family, is very abundant in many parts of the Park, acting as a pioneer tree in burnt-over areas or in the occupation of newly forested land. It is a small tree with a white trunk and small, roundish leaves.

Flowers of Yellowstone Park

By FRANK E. A. THONE, PH. D.

In addition to the trees, Yellowstone Park contains also a great wealth of smaller plant life. It is indeed a great natural wild flower garden, displaying about six hundred and fifty species. No part of the Park is without some share of the blessing of flowers. In the mountain meadows the plants stand so thick, and are so rich with bloom, that the blues and yellows and whites of the petals almost obscure the green of the leaves. And even the blinding white sands in the geyser basins are not absolute deserts, for a few plants persist; dwarf and depauperate, to be sure, but maintaining a determined hold and bearing their flowers and seed each year.

Many of the flowers, like the violets, wild sunflowers, goldenrods, asters, and so on, are reminiscent of other parts of this country, but there are many others more or less peculiar to the region, that are quite striking and frequently very beautiful. It is, of course, impossible even to enumerate them all in a limited space, but mention may be made of the more conspicuous.

In the early spring there are two flowers found in the dry areas at the lower altitudes that are very interesting. These are the ROCK ROSE and the BITTERROOT. Though unrelated botanically they look somewhat alike, being large, open, rose-colored blossoms borne in a cluster of leaves close to the ground. The PASQUE FLOWER, a beautiful light blue cup, is another early comer; also a deep-blue CLEMATIS, which closely resembles the cultivated clematis vine.

Among the flowers of spring and early summer might be mentioned the WATER-LEAF, a bold blue spike that lines the roadsides; the LUNGWORT, with clusters of pendulous light-blue bells; the CAMAS, which bears a spike of blue flowers shaped like little lilies; several kinds of PHLOX, forming cushion-like mats of white flowers on rocky slides, even to the summits of the mountains; misty-white BEDSTRAWS and

bright yellow DOG-TOOTH VIOLETS in the woods, and everywhere in open places the little blue FORGET-ME-NOT dear to all romancers and poets.

Summer brings also a number of flowers that persist until fall, some of them braving even the frost. Blue flowers again hold a prominent place. WILD FLAX and HAREBELL adorn open places; they both have very slender stems and narrow leaves, but the flower of the flax is open and flat, with five separate petals, while that of the harebell, as the name implies, forms a true little bell, with five broad points at the edge. There are several kinds of BEARDTONGUE, all of them blue. Three-foot spikes of LARKSPUR, and its kin-plant MONKSHOOD, are very abundant, the former in fairly dry, gravelly locations, the latter most frequent in moist meadows. The shades of blue affected by these plants are very appropriate to their names: the blue of the larkspur is the color of the morning sky, while that of the monkshood is the more sober hue of night. Blue-and-white LUPINES, with their dense spikes of pea-shaped flowers standing stiff as grenadiers, line all the roadsides and climb the mountains almost to timber-line. The FRINGED GENTIAN, stately and hardy, is a popular park flower.

But blue is not the only fashion. The INDIAN PAINT-BRUSH, or PAINTED CUP, wears almost everything else; its bold splashes of color on the open hillside range all the way from a rich creamy white to a fiery red. Red also, staring, uncompromising, magenta red, is the taller of the two most common varieties of MONKEY-FLOWER, or FALSE SNAP-DRAGON; the other of the pair, which is much addicted to warm baths in the run-off from the geysers, is lemon-yellow. The only COLUMBINE in the Park is not blue, like its Colorado cousin, but bright yellow also. There is a yellow SULPHUR-FLOWER that grows in the drier places; but its close relative, the WILD BUCKWHEAT or UMBRELLA PLANT, spreads a flat head of fine white flowers among the sagebrush. Another flat-headed, white-flowered plant is the COW-PARSNIP, whose stout, hollow stems and huge, hairy leaves dominate all roadsides.

Extremes of life-conditions have their peculiar floras: ponds have their floating masses of yellow WATER-LILIES, and occasionally also that strange plant, the BLADDERWORT, whose roots and finely-divided leaves as well are submersed and floating, with only the naked stem and its odd, yellow flower, standing above the surface of the water. At the other end of the scale there is the PRICKLY-PEAR CACTUS in a few extremely dry soils, and very abundantly distributed STONE-CROP species, that find a roothold on the naked rock.

When the GOLDENRODS and ASTERS come into bloom they are accompanied, at the lower elevations, by thick, round bushes of bright-yellow RABBIT-BRUSH and by the sticky, daisy-like, yellow GUMWEED. Another plant of middle and late summer is the GROUNDSEL, a tall, bushy growth with many lance-shaped, tooth-edged leaves and abundant small, yellow flowers.

But perhaps the most abundant and most striking of the flowers of late summer and early autumn is the FIREWEED, whose great loose heads of crimson bloom flow along the roads like flame. The plant gets its name from the fact that it is always the first to take possession of a burnt-over area after a forest fire. It is a natural pioneer, producing great quantities of down-winged seeds that settle thickly wherever the wind carries them, and are always prepared to assert first claim to any open space.

Thus the pageant marches through the summer, from frost to frost, beginning slowly and with few performers in June, rapidly reaching its climax by the end of July, diminishing again until the cold comes early in September, a few lingerers remaining at last until they are buried by the snow. To the flower-lover an opportunity to watch it pass for a season, or even for a part of a season, is an uninterrupted fascination and a delight.

"Trees and Flowers"

RANK E. A. THONE, Ph.D., is the author of an excellent book on Yellowstone National Park trees and flowers. It is now in its second edition, the first having been sold out quickly although fewer species were treated in the first edition than in the present one.

Besides being an able botanist and a writer with unusual talent, Dr. Thone has written a beautiful poem on flowers which appears in this book.

Doctor Thone is peculiarly well qualified to produce a botanical key that is at once simple, clear and authoritative. A graduate of Johns Hopkins and Chicago Universities, he is well trained in ecological botany.

More than one hundred species are treated, each with a concise but thorough description and a spirited line drawing.

"TREES AND FLOWERS OF YELLOWSTONE NATIONAL PARK" is a pocket size volume with cover in full color, which is suitable both for use in the field and as a library reference book of the principal trees and flowers that characterize the Park.

This book is officially approved by the National Park Service and for your convenience is placed on sale in all of the Haynes Picture Shops and in the Government Information Offices and Museums in the Park.

Doctor Thone is a gifted writer who, in the past few years, has gained an enviable reputation for his ability to treat scientific subjects in an accurate, concise and simple manner, which accounts largely for the immediate success of his book on Yellowstone trees and flowers.

—Advertisement.

"The Yellowstone National Park"

THE late Hiram Martin Chittenden, Brigadier-General, U. S. A., wrote the most comprehensive book on Yellowstone National Park. He had charge of all the engineering work for the Federal Government in the park for many years. He built the famous concrete viaduct in Golden Gate Canyon, the Melan Arch bridge over the Yellowstone river above the falls, the Northern Entrance Arch, and the Chittenden road to the summit of Mt. Washburn which made available to all tourists that spectacular panorama from the summit of the mountain.

His first official connection with the Yellowstone engineering work began in 1891. In 1899 and for many years thereafter he had exclusive charge of the road work which embraced the construction and maintenance of about four hundred miles of modern highways.

General Chittenden wrote several books including the "American Fur Trade of the Far West" and "The History of Steamboat Navigation of the Missouri River"; but his "The Yellowstone National Park," a writing done in his mature years, is not only his masterpiece, but it is generally conceded today to be the best book yet produced on the park.

"The Yellowstone National Park" by Chittenden, has proved very popular. Few if any large libraries are without at least one copy. Government officials, rangers and ranger naturalists in the park, bus drivers, and other people interested in the history, descriptions and scientific data concerning the region are all familiar with this great book, and most of them own one or more copies, which they use for reference.

It is on sale for your convenience at Haynes Picture Shops throughout the park, and in the Government Information offices and museums.

"Discovery of Yellowstone Park"

MATHANIEL PITT LANGFORD was one of the discoverers of the area now known as Yellowstone National Park. He was diarist of the famous Washburn-Langford-Doane Expedition of 1870 which is held directly responsible for the establishment of the Park two years later.

The DISCOVERY OF YELLOWSTONE PARK—1870" is probably the most important historical document in all of the Yellowstone literature. Included in this volume of nearly two hundred pages is the original diary which Mr. Langford wrote on his knee before the campfires at the end of each day's exploration, while the other members, except those on guard, were sleeping.

It was this expedition that was responsible for the naming of such celebrated features as Old Faithful Geyser, Giant Geyser, Castle Geyser, Mount Washburn, Tower Fall and countless others, which have since become known the world over.

Mr. Langford was the first Superintendent appointed in 1872 to govern the Park, which office he held for five years without remuneration of any kind. He even paid his own expenses.

This volume is placed on sale throughout the Park, for your convenience. It is officially approved by the National Park Service, which guarantees its authenticity.

No one who aspires to a knowledge of Wonderland can afford to miss reading this fascinating story of the inception and establishment of the Park.

"Maw's Vacation"

ANYONE who has tramped, or fished, or ridden a hard trail, or scaled a mountain with Emerson Hough has not only enjoyed that experience, but has had his physical endurance severely tested in keeping abreast of him.

Seldom has one found his counterpart—a combination of mountaineering skill, and the ability to write truthfully and interestingly. His writings show an uncanny knowledge of human nature, and manifest kindness toward mankind.

Emerson Hough gained international fame through his epochal "Covered Wagon," and has to his credit many other famous stories including the "Sagebrusher," "54-40 Or Fight" and "Maw's Vacation"—his Yellowstone National Park story.

If you have visited, or hope to visit the Yellowstone, you will surely appreciate "Maw's Vacation"—a book that should be in every library.

"MAW'S VACATION" is on sale throughout the Park for your convenience at the Haynes Picture Shops, in all of the hotels, the principal lodges and the Haynes' shops in the public automobile camps.

The THIRD EDITION is just off the press. Thousands of copies have been sold. If you would understand and appreciate the park—and who would not?—you cannot afford to go without "Maw's Vacation."



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